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A Magazine by

**RAJA SIR'S**  
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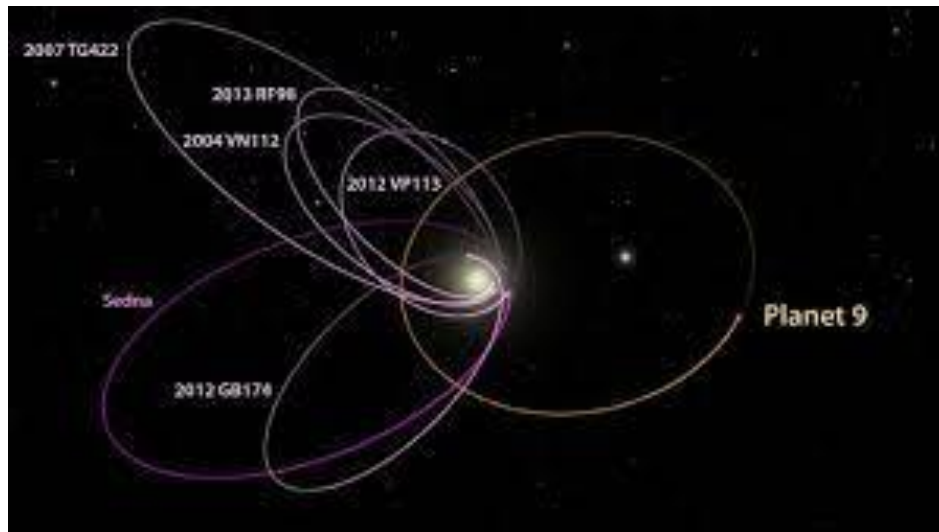


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## THE ELUSIVE PLANET NINE



For the past few years, **planetary astronomers** have been **extensively debating the possibility of the existence of a large planet** in the **outermost parts of the solar system**, well **beyond Pluto**.

In the early 1990s, two astronomers scanning the skies for faint objects beyond Neptune found the Kuiper belt, containing thousands of objects larger than 100km across. This vast assembly of objects was dubbed the trans-Neptunian objects. It was also realised that **Pluto is not the only large object** in these outer reaches of the solar system. **Sedna** (about half the size of Pluto), **Quaoar**, and **Eris** (about Pluto-size) were found. These discoveries led to the **demotion of Pluto to a dwarf planet in 2006**.

### Erratic orbit patterns

At the same time, observations hinted at the **existence of a large planet** hidden in the far reaches of the solar system. It turned out that **Sedna was not moving in an expected way**. This **dwarf planet** has a **weird path swinging from 76AU to over 900AU** with an **orbital period of eleven thousand years**, as though something is tugging it.

In 2016, **Mike Brown and Konstantin Batygin** proposed a **massive planet** about ten Earth-mass far beyond Pluto. Apart from Sedna, **there were six other objects** being pulled in the same direction, and each of these objects is **tilted on its axis**, in the same direction. The proposed '**Planet Nine**' seems to have **left its gravity imprint** in



the **outer reaches of the solar system** by distorting the orbits of objects around it with its gravitational pull. Since then the number of objects that fit the erratic orbit patterns and tilt continues to increase, presently the number being eleven. But no one has seen this hypothesised planet.

It is indeed ironic that **history is now repeating itself** after nearly a century. In the 1920s, **many astronomers were diligently searching for a hypothetical large planet** expected to be six times the Earth-mass. This was to explain the orbital anomalies of the giant planets **Neptune and Uranus**. Their orbits were not quite as expected even after considering perturbations of known planets. In fact, the very discovery of the **planet Neptune in 1846** was based on the knowledge that the orbit of the newly discovered planet Uranus was not following **Newtonian gravitational theory**. It then turned out that Neptune itself was not following its predicted path.

## Planet X

**Many astronomers** became convinced that there must be a **planet beyond Neptune perturbing its path**. This was **dubbed Planet X**. Among the most enthusiastic of the observers keen on finding **Planet X was astronomer Percival Lowell**, who had founded **Lowell Observatory**. Finally, on 18 February, 1930, **Clyde Tombaugh**, looking at two photos of star-studded skies noticed a speck, which turned out to be Pluto, which for quite a while was considered the elusive Planet X.

It was later on felt that this was not the case, as it was not large enough to pull Neptune and distort its orbit. **Later Voyager 2 in 1989**, revealed that **Neptune is fractionally lighter than initially thought**, eliminating the need for a Planet X.

The topic has now been resurrected. Recently physicist Kevin Napier and team suggested that Planet Nine may not exist. However, his work has been **criticised by astronomers** as they feel the study is **statistically incomplete**. But the question remains: if it exists why has it not been seen. The **conventional explanation** is that most surveys are not looking for a single object but a class of objects. It is hoped the **Subaru Telescope**, located at the **Mauna Kea Observatory in Hawaii**, may spot it. But there have been other suggestions as to why it has not been seen despite all these efforts.

One suggestion (by Scholtz and Unwin) is that it may not be a planet, but a **primordial black hole of Neptune mass**. This would make it the size of an orange.



Another suggestion theorised some years ago by me with Arun Kenath and Kiren OV points out that it could be a kilometre sized object made of ultra-compact dark matter particles.

**To identify and distinguish between these two ideas**, suggestions have been made including looking for gamma rays or **releasing a constellation of spacecraft to fly past**, so that the resulting acceleration can be measured along with tidal effects and relativity effects on atomic clocks (carried by the crafts). With all these attempts, the question of whether **Planet Nine exists** or not can hopefully be answered soon, one way or another.

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## ECONOMY

### 1.1 Treasury Bill

Recently, the Government of India, in consultation with Reserve Bank of India, has decided to notify the amounts for the issuance of **Treasury Bills** for the quarter ending June 2021.

- The treasury bills are **money market instruments** issued by the Government of India as a **promissory note** with guaranteed repayment at a later date.
- They are **primarily short-term borrowing tools**, having a maximum tenure of 364 days.
- They are available at **zero coupons (interest) rate**.
- They are issued at a discount to the published **nominal value of government security (G-sec)**.

#### Benefits of Treasury bill

- The funds collected through Treasury bill are typically used to **meet short term requirements** of the government.
- They can be procured by individuals at a **discount to the face value of the security** and are redeemed at their nominal value, thereby allowing investors to pocket the difference.
- It helps the **government raise funds to meet its current obligations**, which are in excess of its annual revenue generation.
- It is aimed at **reducing total fiscal deficit in an economy**, and also in **regulating the total currency in circulation** at any given point of time.

#### Who notifies Treasury bill?

- Treasury bills were **first issued in India** in 1917.
- They are **issued via auctions** conducted by the **Reserve Bank of India (RBI)** at regular intervals.
- **Individuals, trusts, institutions and banks** can purchase T-Bills.

#### Features of Treasury bill

- **Minimum investment:** As per the regulations put forward by the RBI, a minimum



of Rs. 25,000 has to be invested by individuals willing to procure a short term treasury bill.

- **Zero-coupon securities:** G-Sec treasury bills don't yield any interest on total deposits.
  - Upon redemption, the entire par value of this bond is paid to investors, thereby allowing them to realise substantial profits on total investment.
- **Form:** They can be issued in a physical form as a promissory note or dematerialized form by crediting to SGL account (Subsidiary General Ledger Account).

### Types of Treasury bill

- **14-day Treasury bill:** They complete their maturity on 14 days from the date of issue and the minimum amount to invest is Rs.1 lakh.
- **91-day Treasury bill:** They complete their maturity on 91 days from the date of issue and the minimum amount to invest is also Rs.25000.
- **182-day Treasury bill:** They complete their maturity on 182 days from the date of issue and the minimum amount to invest is also Rs.25000.
- **364-day Treasury bill:** They complete their maturity on 364 days from the date of issue and the minimum amount to invest is also Rs.25000.

### 1.2 India's March trade deficit widens to \$14.11 billion – govt

Preliminary data released by the government showed that India's trade deficit in goods widened to USD 14.11 billion in March 2021 from USD 9.98 billion during March 2020.

- **Other Observations:**
  - **Merchandise Exports:** India's merchandise exports in March 2021 were **USD 34.0 billion as compared to USD 21.49 billion in March 2020**, an increase of 58.23%.
    - For the first time ever in a month, Indian exports crossed USD 34 billion in March 2021.
  - **Merchandise Imports:** India's merchandise imports were USD 48.12 billion as compared to USD 31.47 billion in March 2020, an increase of



52.89%.

- India is thus a **net importer in March 2021**, with a trade deficit of USD 14.11 billion.

- **Reasons for Increased Imports:**

- **Relaxation in lockdown policy and start of economic activities** are the main reasons for increase in demand for the goods and the import.
- Also the rise in **global trade** has made the global supply chain active and the commerce is taking place.
- **Oil import** has increased due to opening up of the **transportation sector**.
- **Trade Deficit:** A trade deficit is an amount by which the cost of a country's imports exceeds its exports.

- The **trade deficit in goods** shows a **rise of demand in the economy**.
- It is a part of the **Current Account Deficit**.

- **Current Account Deficit:**



- The **current account** records **exports and imports in goods and services and transfer payments**. It represents a country's transactions with the rest of the world and, like the capital account, is a component of a country's **Balance of Payments (BOP)**.
- There is a deficit in Current Account if the **value of the goods and services imported exceeds the value of those exported**.
- Major components are:
  - **Goods,**
  - **Services,** and
  - **Net earnings on overseas investments (such as interests and dividend) and net transfer of payments** over a period of time, such as **remittances**.
- It is **measured as a percentage of Gross Domestic Product (GDP)**. The formulae for calculating Current Account Balance is:
  - **Current Account Balance = Trade gap + Net current transfers + Net income abroad.**

- Trade gap = Exports – Imports

## Balance of Payments

- **Definition:**

- Balance of Payment (BoP) of a country can be defined as a **systematic statement of all economic transactions of a country** with the rest of the world during a specific period usually one year.

- **Components of BoP:**

- For preparing BoP accounts, economic transactions between a country and rest of the world are grouped under – **Current account, Capital account and Financial Account and Errors and Omissions.**

- It also shows changes in **Foreign Exchange Reserves.**

• **Current Account:** It shows **export and import of visibles** (also called merchandise or goods – represent trade balance) and **invisibles** (also called non-merchandise).

- Invisibles include services, transfers and income.

- **Capital Account and Financial Account:** It shows a capital expenditure and income for a country.

- It gives a summary of the **net flow of both private and public investment** into an economy.

- **External Commercial Borrowing (ECB), Foreign Direct Investment, Foreign Portfolio Investment,** etc form a part of capital account.

- **Errors and Omissions:** Sometimes the balance of payment does not balance. This imbalance is shown in the BoP as errors and omissions. It reflects the country's inability to record all international transactions accurately.

- Overall the **BoP account can be a surplus or a deficit.**

- If there is a deficit then it can be bridged by taking money from the **Foreign Exchange (Forex) Account.**

- If the reserves in the forex account are falling short then this

scenario is referred to as BoP crisis.

### 1.3 Millet farming sees revival in India

An **International Fund for Agricultural Development (IFAD)** supported initiative to **revive Kodo and Kutki Millets cultivation**, started in the year 2013-14 in Dindori district of Madhya Pradesh, has given new life to the forgotten crops.

- IFAD is a specialized agency of the **United Nations** and was one of the major outcomes of the **1974 World Food Conference**.
- Founded in 1977, IFAD **focuses on rural poverty reduction**, working with poor rural populations in developing countries to **eliminate poverty, hunger, and malnutrition**.

#### Beginning:

- The project was started with **1,497 women-farmers from 40 villages** – mostly from the **Gonda and Baiga tribes** – growing these two minor millets (Kodo and Kutki) on 749 acres

#### Seed and Training:

- The identified farmers were **supplied good-quality seeds and trained by scientists from the Jawaharlal Nehru Agricultural University** in Jabalpur and the local Krishi Vigyan Kendra – on field preparation, line-sowing (as opposed to conventional broadcasting by hand) and application of compost, zinc, bavistin fungicide and other specific plant protection chemicals.

#### Self Help Groups:

- A federation of the **farmers' self-help groups** undertook procurement of the produce and also its mechanical de-hulling (the traditional manual pounding process to remove husk from the grain was time-consuming).

#### Impact:

- Helped in increasing the **number of farmers growing kodo-kutki** in the

project area to **14,301 in 2019-20.**

- Helped in increasing the acreage to 14,876 acres.
- Helped in **meeting nutritional goals** (fighting malnourishment among children).
- Helped in **reviving millet cultivation** (crop yields are 1.5-2 times higher than before).

## Millets

Millets are often referred to as **Superfood** and its production can be seen as an approach for **sustainable agriculture** and a healthy world.

- **Millets in India:**

• The three major millet crops currently grown in India are **jowar (sorghum), bajra (pearl millet) and ragi (finger millet).**

• Along with that, India grows a rich array of bio-genetically diverse and **indigenous varieties of “small millets” like kodo, kutki, chenna and sanwa.**

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

- **Need for Reviving Millet Cultivation:**

- **Nutritional Security:**

- Millets are **less expensive and nutritionally superior** to wheat & rice owing to their high protein, fibre, vitamins and minerals like iron content.

- Millets are also **rich in calcium and magnesium.**

- **For example,** Ragi is known to have the highest calcium content among all the food grains.

- Its **high iron content can fight high prevalence of anaemia** in Indian women of reproductive age and infants.

- **Climate Resilient:**

- They are also harder and **drought-resistant crops**, which has to

do with their **short growing season** (70-100 days, as against 120-150 days for paddy/wheat) and **lower water requirement** (350-500 mm versus 600-1,200 mm).

- **Economic Security:**

- As low investment is needed for production of millets, these can prove to be a sustainable income source for farmers.

- **Can Tackle Health Issues:**

- Millets can help **tackle lifestyle problems and health challenges such as obesity and diabetes** as they are **gluten-free and have a low glycemic index** (a relative ranking of carbohydrates in foods according to how they affect blood glucose levels).

- Millets are rich in **antioxidants**.

- **Challenges:**

- **Preference for Wheat:**

- Wheat has gluten proteins that swell and form networks on adding water to the flour, making the dough more cohesive and elastic.
- The resultant chapattis come out soft, which isn't possible with millets that are gluten-free.

- **Increased Demand for Processed Food:**

- India has seen a jump in consumer demand for **ultra-processed and ready-to-eat products**, which are high in sodium, sugar, trans-fats and even some carcinogens.
- With the **intense marketing of processed foods**, even the rural population started perceiving mill-processed rice and wheat as more aspirational.

- **National Food Security Act Promoting Other Grains:**

- In rural India, the **National Food Security Act of 2013** entitles three-fourths of all households to **5 kg of wheat or rice** per person per month at Rs 2 and Rs 3 per kg, respectively, thus **reducing the demand for millets**.

- **Indian Initiatives:**



- **Promoting Millets:**
  - The Union Agriculture Ministry, in April 2018, **declared millets as “Nutri-Cereals”**, considering their “high nutritive value” and also “anti-diabetic properties”.
  - 2018 was also observed as ‘**National Year of Millets**’.
- **Increase in MSP:**
  - The government has hiked the **Minimum Support Price (MSP)** of Millets, which came as a big price incentive for farmers.
  - Further, to provide a steady market for the produce, the government has included millets in the public distribution system.
- **Input Support:**
  - The government has introduced provision of seed kits and inputs to farmers, building value chains through **Farmer Producer Organisations** and supporting the marketability of millets.
- **International Initiative:**
  - The **United Nation General Assembly** adopted an India-sponsored resolution to mark 2023 as the **International Year of Millets**.

### Road Ahead

- Farming of millets **deserves encouragement** especially in view of their climate resilience, short cropping duration and ability to grow on poor soils, hilly terrains and with little rain.
- Because of their accessibility to the poor, they **can play an essential role in providing nourishment to people across all income categories** and supporting climate adaptation of rainfed farming systems.

### 1.4 Tata-Mistry judgment: What SC has said about the rights of minority shareholders?

Recently, the **Supreme Court** overturned the **National Company Law Appellate Tribunal (NCLAT)** decision and upheld **Tata Group’s decision to remove Cyrus Pallonji Mistry** as

### the Executive Chairman and Director of Tata Sons.

- **Supreme Court Observations:**

- **Minority shareholders** or their representatives are **not automatically entitled to a seat** on the private company's board like a small shareholder's representative.
- The provisions contained in the **Companies Act 2013** only protects the **rights of small shareholders** of listed companies by asking such companies to have on their board at least one director elected by such small shareholders.
- Since the **Mistry family and the Shapoorji Pallonji (SP) Group** are not small shareholders, but minority shareholders, there is no statutory provision which gives them the "**right to claim proportionate representation,**" on the board of Tata Sons.
- **Private companies**, which have **minority shareholders**, are **free to make an enabling provision** but are **under no statutory obligation** to give minority shareholder seats on the board.

### Minority Shareholders

- They are the equity holders of a firm **who do not enjoy the voting power of the firm by virtue of his or her below 50% ownership** of the firm's equity capital.

### Small Shareholders

- According to the Companies Act, small shareholders is a shareholder or group of shareholders who hold shares of nominal value of not more than Rs. 20,000.

### The Companies Act 2013

- It is an Indian company law which regulates incorporation of a company, responsibilities of a company, directors, dissolution of a company.
- **Significance of the Judgement:**
  - Though the judgment does not directly impact the right of minority shareholders, such shareholders will have to ensure that they have a contract with the majority shareholders or the promoters of the company



to ensure they have adequate representation on the board.

### National Company Law Appellate Tribunal

- It was **constituted under Section 410 of the Companies Act, 2013** for hearing appeals against the orders of **National Company Law Tribunal (NCLT)**.
- NCLAT is also the Appellate Tribunal for hearing appeals against the orders passed by NCLT(s) under the **Insolvency and Bankruptcy Code, 2016 (IBC)**.
  - NCLAT also hears appeals against the orders passed by **Insolvency and Bankruptcy Board of India**.
- NCLAT is also the Appellate Tribunal to hear and dispose of appeals against any direction issued or decision made or order passed by the **Competition Commission of India (CCI)**.

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### 1.5 Working of Pre-pack under Insolvency and Bankruptcy Code

Recently, the central government has promulgated an ordinance allowing the use of **pre-packs as an insolvency resolution mechanism for Micro, Small and Medium Enterprises (MSMEs)** with defaults up to Rs 1 crore, under the Insolvency and Bankruptcy Code (IBC).

- The move comes soon after the end of a **one-year suspension of insolvency initiation** imposed by the government in light of the Covid-19 pandemic.
- The government had last year also **increased the minimum default threshold for insolvency proceedings** from Rs 1 lakh to Rs 1 crore.

#### Pre-packs under IBC

- It is the **resolution of the debt of a distressed company** through an agreement between secured creditors and investors instead of a public bidding process.
  - It has become an **increasingly popular mechanism for insolvency resolution** in the UK and Europe over the past decade.
- Under the pre-pack system, **financial creditors will agree to terms with a potential investor** and seek approval of the resolution plan from the National Company Law Tribunal (NCLT).
- The **approval of a minimum of 66 per cent of financial creditors** that are



unrelated to the corporate debtor would be required before a resolution plan is submitted to the NCLT.

- The NCLTs are also required to **either accept or reject any application for a pre-pack insolvency** proceeding before considering a petition for a CIRP.

### **Benefits of pre-packs over Corporate Insolvency Resolution Process (CIRP)**

- The CIRP is often **criticised for taking too much time for resolution** as over 86 per cent of the 1717 ongoing insolvency resolution proceedings had crossed the 270-day threshold.
  - The key reasons behind delays in the CIRPs are **prolonged litigations by erstwhile promoters and potential bidders.**
- The pre-pack in contrast is **limited to a maximum of 120 days with only 90 days available** to the stakeholders to bring the resolution plan to the NCLT.
- The key difference between pre-packs and CIRP is that the **existing management retains control in the case of pre-packs** while a **resolution professional takes control of the debtor** as a representative of financial creditors in the case of CIRP.
  - It allows for **minimal disruption of operations** relative to a CIRP.

### **Why introduction of pre-packs is necessary?**

- The pre-packs are largely aimed at **providing MSMEs with an opportunity to restructure their liabilities** and start with a clean slate.
- The pre-packs are aimed at **providing adequate protections so that the system is not misused by firms** to avoid making payments to creditors.
- The pre-packs will **help corporate debtors to enter into consensual restructuring** with lenders and address the entire liability side of the company.

### **Protection of creditors from misuse by promoters**

- The pre-pack provisions introduced by the central government provides for **adequate protection to ensure the provisions were not misused by errant promoters.**
- The pre-pack mechanism allows for a **Swiss challenge for any resolution plans** which proved less than full recovery of dues for operational creditors.
  - Under the Swiss challenge mechanism, any third party would be



permitted to **submit a resolution plan for the distressed company** and the original applicant would have to either match the improved resolution plan or forego the investment.

- The creditors are also **permitted to seek resolution plans from any third party** if they are not satisfied with the resolution plan put forth by the promoter.

### 1.6 Vivad Se Vishwas Scheme

Recently, the Central Board of Direct Taxes (CBDT) has informed that it had **settled tax disputes in more than 1.3 lakh pleas** made under the **Vivad Se Vishwas scheme**, fetching ₹54,005 crore to the exchequer.

#### Vivad Se Vishwas Scheme

- It is a **direct tax scheme** announced in Budget 2020, for **settling tax disputes** between individuals and the income tax department.
- Under the scheme, **penalty and interest were to be waived** if the disputed amount was paid before the stipulated date.
- The income tax disputes settled under it **cannot be reopened in any other proceeding by the income tax department** or any other designated authority.
- The **main purpose** of the scheme is to:
  - Reduce pending litigation
  - Generate revenues for the Govt.
  - Get relief from pending dispute by paying disputed tax and get waiver from payment of interest and penalty and also get immunity from prosecution.

#### Benefits of Vivad se Vishwas Scheme

- **Brings certainty:** It ends ambiguity around the likely outcome of disputes.
- **Instant relief:** The resolution process can be completed within a month, bringing an expeditious end to protracted disputes.
- **Tangible savings:** The Scheme provides for waiver of interest, penalty and prosecution.





- In disputes involving penalty, interest or fine, only partial amounts need to be paid which will also have a bearing on the ongoing cost of litigation.
- **Flexibility:** The Scheme provides taxpayers with the option to choose the years of payment (even if the dispute is pending at the behest of the tax authorities), without creating a precedent.
- **Focus on core activities:** Frees the management from allocating time and resources towards ongoing disputes and allows organisations to focus on strategic business matters.

### Significance of Vivad Se Vishwas Scheme

- It provides for the **settlement of disputed tax, interest, penalty or fees** in relation to an assessment or reassessment order.
- It grants **immunity to taxpayers from levy of interest, penalty and institution of any proceeding for prosecution** for any offence under the Income-Tax Act in respect of matters covered in the declaration.
- Its primary objectives are to **reduce pending income tax litigation, generate timely revenue and provide taxpayers peace of mind.**
- It has been a **successful scheme that resolved several litigations** quickly and settled the matter amicably.

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### 1.7 India Energy Exchange (IEX)

Recently, an average **spot power price rose by 65% to Rs. 4.06 per unit** in March as compared to previous month at the **India Energy Exchange (IEX)**.

#### India Energy Exchange (IEX)

- It is the **first and largest energy exchange** in India.
- It is providing a **nationwide, automated trading platform** for physical delivery of electricity, Renewable Energy Certificates and Energy Saving Certificates.
- It enables **efficient price discovery and increases the accessibility and transparency** of the power market in India while also enhancing the speed and



efficiency of trade execution.

- It is a publicly listed company with **National Stock Exchange (NSE)** and **Bombay Stock Exchange (BSE)**.
- It is approved and regulated by **Central Electricity Regulatory Commission (CERC)** and has been operating since 2008.
- In 2016, **IEX received three ISO Certifications** i.e. ISO 9001:2015 for quality management, ISO 27001:2013 for Information security management and ISO 14001:2015 for environment management.

### Products of Indian Energy Exchange (IEX)

- **Day-Ahead Market (DAM):** It is a physical electricity trading market for deliveries for any/some/all 15 minute time blocks in 24 hours of next day starting from midnight.
- **Term-Ahead Market (TAM):** The contracts under TAM cover a range for buying/selling electricity for duration up to 11 days.
  - It enables participants to purchase electricity for the same day through intra-day contracts, for the next day through day-ahead contingency, on daily basis for rolling seven days through daily contracts.
- **Renewable Energy Certificates (REC):** The Renewable Energy (RE) generator can opt to get RECs against green attributes of their generation.
  - It aims to ease the purchase of renewable energy by the state utilities and obligated entities, including the states which are not well endowed with RE sources.
  - The REC framework seeks to create a national level market for renewable generators to recover their cost.
- **Energy Saving Certificates (ESCerts):** These are the tradable certificates under the Perform, Achieve, Trade (PAT) Scheme of Bureau of Energy Efficiency (BEE).

### 1.8 Payments bank deposit limit doubled by RBI

Recently, the Reserve Bank of India (RBI) has announced that it has **increased the maximum end of day balance for payment banks** to Rs. 2 lakh from Rs. 1 lakh.



### Key Highlights

- The extant '**Guidelines for Licensing of Payments Banks**' issued in 2014, allowed payments banks to hold a maximum balance of ₹ 1 lakh per individual customer.
- The **limit of maximum balance at end of the day has been enhanced** for the following objectives:
  - Encourage payments bank's efforts for **financial inclusion**; and
  - Expand payments bank's ability to **cater to the needs of MSMEs, small traders and merchants**
- The enhancement of limit will help **boost the payment banks access to greater client network and improve digital transactions** across the country.
- In September 2013, the Reserve Bank of India constituted a **committee headed by Dr Nachiket Mor** to study '**Comprehensive financial services for small businesses and low income households**'.
- In August 2015, RBI had given **in-principle approval to 11 entities** to start payments bank.
- The **Airtel Payments Bank was the first one** to launch payments bank in the country.
  - **India Post Payments Bank (IPPB)** had started operations at two pilot branches in January 2017.
  - Some other popular payments banks are **Paytm Payments Bank** and **Fino Payments Bank**.

### Payments Bank

- They are a **type of savings account** which can accept a **restricted deposit** but **cannot issue loans or credit cards** to customers.
- They can **operate both current as well as saving accounts** and can provide all other services like **ATM cards, fund transfers, bill payments, recharges, net banking** among others to the account holders.
- The payments banks are **allowed to make personal payments and receive remittances from the cross border** on the current accounts.
- The payments banks will have to **deposit the amount in the form of a Cash**



**Reserve Ratio (CRR) with RBI** as other commercial banks do.

- The payments Banks will have to **invest a minimum of 75% of its demand deposits** in government treasury/securities bills with maturity up to one year.
  - They can hold a maximum of **25% in current and fixed deposits** with other commercial banks for operational purposes.

### **Advantages of Payments Bank**

- **Financial Inclusion:** Its aim is to provide small savings accounts, payments and remittance services to migrant labour workforce, low income households, small businesses, and other unorganised sector entities.
- These banks currently **offer interest rates similar to that being offered by regular banks.**
- The central bank has extended the **National Electronic Funds Transfer (NEFT) and Real-Time Gross Settlement (RTGS) facilities** to digital payments intermediaries.
- The payments banks offer **zero balance or no minimum balance accounts** without any additional fee and thereby differ from commercial banks.
- The RBI seeks to **increase the penetration level of financial services to the remote areas** of the country with payments banks.

### **What a Payments Bank cannot do?**

- The payments banks **cannot accept fixed or recurring deposits.**
- A payments bank is **not allowed to give any form of loan or issue a credit card**, which is also a form of unsecured personal loan.
- The payments banks **cannot accept deposits from the Non-Resident Indians (NRIs).**

### **1.9 Government Securities Acquisition Programme (G-SAP)**

Recently, the governor of RBI has announced a new programme called **Government Securities Acquisition Programme (G-SAP)**.



### Need for Government Securities Acquisition Programme (G-SAP)

- It will reiterate the **RBI's commitment to maintain the current accommodative policy stance** until the economy is back on track.
- It aims to seek to quell the **concerns of market participants over rising bond yields.**
- The primary concern of the market was the **government's huge borrowing programme** and the subsequent supply of high-quality paper that could have possibly pushed the yields higher.

### What is Government Securities Acquisition Programme (G-SAP)?

- Under G-SAP, the **RBI will purchase government securities worth Rs 1 lakh crore** in the first quarter of FY22.
- It is a **structured purchase program** which will definitely **calm investors' nerves and help market participants to bid better** in scheduled auctions and reduce volatility in bond prices.

### Significance of Government Securities Acquisition Programme (G-SAP)

- The G-SAP aims to **provide more comfort to the bond market** in the backdrop of the government's elevated borrowing for this year, which the RBI has to ensure goes through without causing disruption.
  - It will provide **certainty to the bond market participants** with regard to RBI's commitment of support to the bond market in FY22.
- The market participants have always **wanted to know the RBI's Open Market Operations (OMO) purchase calendar**, and the RBI has now provided that to the market through G-SAP.
- It will help **reduce the spread between the repo rate and the 10-year government bond yield** which will help to reduce the aggregate cost of borrowing for the Centre and states in FY22.

### 1.10 PLI Scheme 'National Programme on High Efficiency Solar PV Modules'

Recently, the Union Cabinet has approved the **Ministry of New & Renewable Energy's** proposal for implementation of the **Production Linked Incentive (PLI) Scheme**



### ‘National Programme on High Efficiency Solar PV (Photo Voltaic) Modules’.

- India has set an **ambitious target of 175 gigawatts (GW) of renewable energy capacity** by 2022 which includes 100 GW from solar and 60 GW from wind energy.
- The Solar capacity addition presently **depends largely upon imported solar PV cells and modules** as the domestic manufacturing industry has limited operational capacities of solar PV cells and modules.
- India desperately needs to **break out of the low-cost low-quality loop many parts of solar manufacturing** especially that in the MSME sector is stuck in.
- India’s solar cell (component of a solar panel) **manufacturing capacity stands at 3 GW** and of module (finished product) is 5 GW, while the country’s **solar power generation capacity stands at 32 GW**.

### Key Features of PLI Scheme ‘National Programme on High Efficiency Solar PV Modules’

- The solar PV manufacturers will be selected through a **transparent competitive bidding process**.
- The PLI will be **disbursed for 5 years post commissioning of solar PV manufacturing plants**, on sales of high efficiency solar PV modules.
- The PLI amount will **increase with increased module efficiency** and increased local value addition.
- The **outcomes/ benefits** expected from the scheme are as follows:
  - Additional 10,000 MW capacity of integrated solar PV manufacturing plants,
  - Direct investment of around Rs.17200 crore in solar PV manufacturing projects
  - Demand of Rs.17500 crore over 5 years for ‘Balance of Materials’,
  - Direct employment of about 30,000 and indirect employment of about 120,000 persons,
  - Import substitution of around Rs.17500 crore every year, and
  - Impetus to Research & Development to achieve higher efficiency in solar



## PV modules

### Significance of National Programme on High Efficiency Solar PV Modules

- It is aimed at **achieving manufacturing capacity of Giga Watt (GW) scale** in high efficiency solar PV modules with an outlay of Rs.4,500 crore.
- It will **reduce import dependence** in a strategic sector like electricity.
- It will also **support the Atmanirbhar Bharat initiative**.
- It will make the sector more **operational and accessible to foreign players**.

### 1.11 Navigating Fall of Rupee

Recently, the **rupee fell sharply by 105 paise** which is its biggest single session fall in 20 months and to close at a five-month low of 74.47 against the US dollar amid concerns over Covid-19.

- Over the last one year, the **rupee has appreciated** from around 77 against the US dollar to 72.7.
- The move to 77 had been preceded by a **sharp rally in the dollar index** before the Covid-19 pandemic hit the global economy.
- The **gradual appreciation** was underpinned by a **fall in the dollar index**, and a strong flow of foreign direct investment and foreign portfolio investment.
- The rupee has been **depreciating amid concerns over Covid** and the RBI policy announcement.
- The currency traders and analysts have argued that the **abrupt fall cannot be a “false signal”** and they expect the rupee to head back to levels of 77-78 over the next few months.
- The rupee is expected to **depreciate gradually to levels of 76.5 to 77** in three to four months as rising Covid numbers have dampened market sentiment.

### Possible implication of Fall of Rupee

- The depreciation in the rupee **impacts all expenditure in dollar terms** i.e. **imports, foreign education, travel, investments abroad, medical treatment etc.**

- If a person is an **exporter or NRI sending money back home**, the depreciation would fetch him/her more rupees per dollar.
- **Impact on education abroad:** If a student is planning to go for a higher education in the US for a course with an annual fee of US\$ 50,000.
  - A 5% depreciation in the rupee from 72.5 to 76.125 would raise the cost for one year from Rs 36.26 lakh to Rs 38.06 lakh which is a jump of Rs 1.8 lakh.
  - In 2019-20, resident Indians remitted \$4.99 billion, under the liberalised remittance scheme, for the purpose of study abroad, besides \$6.95 billion for travel.
  - The total remittance under LRS for the year 2019-20 amounted to \$18.76 billion i.e. 17 times the remittance of \$1.09 billion in 2013-14.
- **Impact on cost of fuel:** A depreciating rupee increases the cost of crude import, which accounts for almost 20% of India's imports.
  - A rise in cost of crude raises fuel prices and inflation which in turn, leads to a rise in interest rates, which increases our borrowing cost.

### 1.12 Monetary policy review: RBI changes the way it forecasts inflation rate

The **Reserve Bank of India (RBI)** has released the **Monetary Policy Report** for the month of April 2021.

- **Unchanged Policy Rates:**
  - **Repo Rate** – 4%.
  - **Reverse Repo Rate** – 3.35%.
  - **Marginal Standing Facility (MSF)** – 4.25%.
  - **Bank Rate**- 4.25%.
- **GDP Projection:**
  - **Real Gross Domestic Product (GDP)** growth for 2021-22 has been retained at **10.5%**.
- **Inflation:**

- RBI has revised the projection for **Consumer Price Index (CPI)** inflation to:
  - 5.0% in **Quarter 4** of 2020-21.
  - 5.2% in **Quarter 1** of 2021-22.
  - 5.2% in **Quarter 2** of 2021-22.
  - 4.4% in **Quarter 3** of 2021-22.
  - 5.1% in **Quarter 4** of 2021-22.
- **Accommodative Stance:**
  - The RBI decided to **continue with the accommodative stance** as long as necessary to sustain growth on a durable basis and continue to mitigate the impact of **Covid-19** on the economy, while ensuring that **inflation** remains within the target going forward.
  - An **accommodative stance** means a **central bank will cut rates to inject money** into the financial system **whenever needed**.
- **Support to Financial Institutions:**
  - RBI would extend fresh support of **Rs. 50,000 crore** to the **All India Financial Institutions** for new lending in **Financial Year (FY) 2021-22**.
    - **National Bank for Agriculture and Rural Development (NABARD)** will be provided a **Special Liquidity Facility (SLF)** of **Rs. 25,000 crore** for one year to support agriculture and allied activities, the rural non-farm sector and **Non-Banking Financial Companies (NBFCs) – Micro-Finance Institutions (MFIs)**.
    - An SLF of **Rs. 10,000 crore** will be extended to the **National Housing Bank** for one year to support the housing sector.
    - **Small Industries Development Bank of India (SIDBI)** will be provided **Rs. 15,000 crore** under this facility for up to one year for funding of **Micro, Small and Medium enterprises (MSMEs)**.
  - All three facilities will be available at the **prevailing policy repo rate**.
- **Review Committee for ARC's:**

- Signalling the importance of **Asset Reconstruction Companies (ARCs)** to deal with bad loans, the RBI would **constitute a committee to undertake a comprehensive review** of the working of ARCs in the financial sector ecosystem.
- The committee will **recommend suitable measures** for enabling such entities to meet the growing requirements of the financial sector.
- **Extension of Priority Sector Lending:**
  - A six-month extension to September 30, 2021 for **Priority Sector Lending (PSL)** classification for lending by banks to NBFCs for ‘**on-lending**’ to sectors that contribute significantly to the economy in terms of export and employment — has been approved.
    - **On-lending** means to lend (borrowed money) to a **third party**.
  - This would **provide an impetus to NBFCs** providing credit at the bottom of the pyramid.
- **Government Securities Acquisition Programme (G-SAP) 1.0:**
  - **About:**
    - The RBI, for the year 2021-22, has decided to put in place a secondary market **Government Security (G-sec) Acquisition Programme or G-SAP 1.0**.
    - It is part of RBI's **Open Market Operations**.
    - Under the programme, the **RBI will commit upfront to a specific amount of Open Market Purchases of government securities**.
    - The **first purchase** of government securities for an aggregate amount of **Rs. 25,000 crore** under G-SAP 1.0 will be conducted on **15<sup>th</sup> April, 2021**.
  - **Objective:**
    - To **avoid volatility in the G-sec market** in view of its central role in the pricing of other financial market instruments across the term structure and issuers, both in the public and private sectors
  - **Significance:**

- It will **provide certainty to the bond market participants** with regard to RBI's commitment of support to the bond market in FY22.
- The announcement of this structured programme will **help reduce the difference between the repo rate and the 10-year government bond yield**. That, in turn, will help to **reduce the aggregate cost of borrowing** for the Centre and states in FY 2021-22.
- It will enable a stable and **orderly evolution of the yield curve amidst comfortable liquidity conditions**.
  - A yield curve is a line that **plots yields (interest rates) of bonds** having equal credit quality but differing maturity dates.
  - The **slope of the yield curve gives an idea of future interest rate** changes and economic activity.

#### Note:

- **Repo and Reverse Repo Rate:**

- Repo rate is the **rate at which the central bank of a country (Reserve Bank of India in case of India) lends money to commercial banks in the event of any shortfall of funds**. Here, the central bank purchases the security.
- Reverse repo rate is **the rate at which the RBI borrows money from commercial banks within the country**.

- **Bank Rate:**

- It is the **rate charged by the RBI for lending funds to commercial banks**.

- **Marginal Standing Facility (MSF):**

- MSF is a **window for scheduled banks to borrow overnight from the RBI** in an emergency situation when interbank liquidity dries up completely.
- Under interbank lending, banks lend funds to one another for a specified

term.

- **Open Market Operations:**

- These are **market operations conducted by RBI by way of sale/purchase of government securities to/from the market with an objective to adjust the rupee liquidity conditions** in the market on a durable basis.
- **If there is excess liquidity**, RBI resorts to sale of securities and sucks out the rupee liquidity.
- Similarly, **when the liquidity conditions are tight**, RBI buys securities from the market, thereby releasing liquidity into the market.
- It is one of the **quantitative (to regulate or control the total volume of money) monetary policy tools** which is employed by the central bank of a country to control the money supply in the economy.

- **Government Security:**



- A G-Sec is a **tradable instrument issued by the Central Government** or the State Governments.
- It **acknowledges the Government's debt obligation**. Such securities are **short term** (usually called treasury bills, with original maturities of less than one year- presently issued in three tenors, namely, 91 day, 182 day and 364 day) or long term (usually called Government bonds or dated securities with original maturity of one year or more).

- **Inflation:**

- Inflation **refers to the rise in the prices of most goods and services of daily or common use**, such as food, clothing, housing, recreation, transport, consumer staples, etc.
- Inflation **measures the average price change in a basket of commodities and services over time**.
- Inflation is **indicative of the decrease in the purchasing power** of a unit of a country's currency. This could ultimately lead to a deceleration in economic growth.

- **Consumer Price Index:**



- It measures price changes from the perspective of a retail buyer. It is released by the **National Statistical Office (NSO)**.
- The CPI calculates the difference in the price of commodities and services such as food, medical care, education, electronics etc, which Indian consumers buy for use.

### 1.13 India unlikely to go along with US' global minimum corporate tax proposal

The US Treasury Secretary has urged **G20 nations** to move towards a **global minimum corporate tax**.

- It is **an attempt to reverse a “30-year race to the bottom”** in which countries have resorted to slashing corporate tax rates to attract multinational corporations (MNCs).
- **Proposal on a Global Minimum Corporate Tax Rate:**
  - The US proposal envisages a **21% minimum corporate tax rate, coupled with cancelling exemptions on income from countries** that do not legislate a minimum tax to discourage the shifting of multinational operations and profits overseas.
  - The proposal for a minimum corporate tax is **tailored to address the low effective rates of tax shelled out by some of the world's biggest corporations**, including digital giants such as Apple, Alphabet and Facebook, as well as major corporations such as Nike and Starbucks.
    - These companies typically **rely on complex webs of subsidiaries to Hoover profits out of major markets into low-tax countries** such as Ireland or Caribbean nations such as the British Virgin Islands or the Bahamas, or to central American nations such as Panama.
- **US' Reasons for the Proposal:**
  - The proposal **aims to somewhat offset any disadvantages** that might arise from the **proposed increase in the US corporate tax rate**.
    - The proposed increase to 28% from 21% would partially reverse the previous cut in tax rates on companies from 35% to 21% by

way of a 2017 tax legislation.

- The increase in corporation tax **comes at a time when the pandemic is costing governments across the world**, and is also timed with the US's push for a USD 2.3 trillion infrastructure upgrade proposal.
- **Significance:**
  - A global compact on this issue, at the time of pandemic, **will work well for the US government and for most other countries in western Europe**, even as some low-tax European jurisdictions such as the Netherlands, Ireland and Luxembourg and some in the Caribbean rely largely on **tax rate arbitrage** to attract MNCs.
  - The plan to peg a minimum tax on overseas corporate income **seeks to potentially make it difficult for corporations to shift earnings offshore**.
  - The **average headline corporate tax rate in advanced economies has fallen** from 32% in 2000 to just over 23% by 2018.
    - That is largely because **smaller countries such as Ireland, the Netherlands and Singapore have attracted footloose businesses by offering low corporate tax rates**.
    - Footloose industry is a general term for an industry that can be placed and located at any location without effect from factors such as resources or transport.
    - **Multinational companies** with increasingly intangible assets such as the global tech firms **have shifted some actual business and a lot of profits into these tax havens and low-tax jurisdictions**, lowering their global tax bills.
- **International Response:**
  - The European Commission backed the proposal, but the global minimum rate should be decided after discussions in the **Organisation for Economic Cooperation and Development (OECD)**.
    - The European nations, including Germany and France have supported the US proposal.
    - The OECD and Group of Twenty (G20) have been leading

the **Base Erosion and Profit Shifting (BEPS) initiative**—a multilateral negotiation with over 135 countries, including the United States—since 2013.

- **BEPS** refers to tax planning strategies used by multinational enterprises that exploit gaps and mismatches in tax rules to avoid paying tax.
- **China** is not likely to have a serious objection with the US call, but an **area of concern** for Beijing would be the **impact of such a tax stipulation on Hong Kong**, the seventh-largest tax haven in the world and the largest in Asia.
- The US proposal also has support from the **International Monetary Fund (IMF)**.
- **Challenges:**
  - The proposal **impinges on the right of the sovereign to decide a nation's tax policy**.
  - Taxation is ultimately a sovereign function, and depending upon the needs and circumstances of the nation, the government is open to participate and engage in the emerging discussions globally around the corporate tax structure.
  - A global minimum rate **would essentially take away a tool that countries use to push policies that suit them**. A lower tax rate is a tool they can use to alternatively push economic activity.
    - For instance, in the backdrop of the pandemic, IMF and World Bank data suggest that developing countries with less ability to offer mega stimulus packages may experience a longer economic hangover than developed nations.
    - Also, a global minimum tax rate **will do little to tackle tax evasion**.

#### India's Position

- **Cut in Corporate Tax:**
  - In a bid to revive investment activity, the Finance Minister announced, in September 2019, a sharp cut in corporate taxes for domestic companies to

22% and for new domestic manufacturing companies to 15%.

- The **Taxation Laws (Amendment) Act, 2019** resulted in the insertion of a section (115BAA) to the Income-Tax Act, 1961 to provide for the concessional tax rate of 22% for existing domestic companies subject to certain conditions including that they do not avail of any specified incentive or deductions.
- Also, the existing domestic companies opting for the concessional taxation regime will **not be required to pay any Minimum Alternate Tax**.
- The cuts effectively brought **India's headline corporate tax rate broadly at par with the average 23% rate in Asian countries**.
  - China and South Korea have a tax rate of 25% each, while Malaysia is at 24%, Vietnam at 20%, Thailand at 20% and Singapore at 17%.
  - The effective tax rate, inclusive of surcharge and cess, for Indian domestic companies is around 25.17%.
  - The average corporate tax rate stands at around 29% for existing companies that are claiming some benefit or the other.
- **Equalisation Levy:**
  - To **address the challenges posed by the enterprises who conduct their business through digital means** and carry out activities in the country remotely, the government has the '**Equalisation Levy**'.
  - The equalization levy is **aimed at taxing foreign companies which have a significant local client base in India** but are billing them through their offshore units, effectively escaping the country's tax system.
  - The Income-tax Act, 1961 has been amended to bring in the concept of "**Significant Economic Presence**" for establishing "business connection" in the case of non-residents in India.
- **Agreements for Exchange of Information:**
  - India has been proactively engaging with foreign governments with a view to facilitating and enhancing exchange of information under **Double Taxation Avoidance Agreements, Tax Information Exchange**



### **Agreements and Multilateral Conventions** to plug loopholes.

- Such agreements **promote cooperation in tax matters**.
- Besides, **effective enforcement actions** including expeditious investigation in foreign assets cases have been launched, including searches, enquiries, levy of taxes, penalties, etc.

### **Corporate Tax**

- Corporation Tax or Corporate Tax is a **direct tax levied on the net income or profit of a corporate entity** from their business, foreign or domestic.
- The rate at which the tax is imposed as per the provisions of the Income Tax Act, 1961 is known as the Corporate Tax Rate.
- The Corporate Tax rate is based on a slab rate system depending on the type of corporate entity and the different revenues earned by each of corporate entities.

### **Minimum Alternate Tax**

- At times it may happen that a taxpayer, being a company, may have generated income during the year, but by taking the advantage of various provisions of Income-tax Law (like exemptions, deductions, depreciation, etc.), it may have reduced its tax liability or may not have paid any tax at all.
- Due to an increase in the number of zero tax paying companies, Minimum Alternate Tax (MAT) was introduced by the Finance Act, 1987 with effect from assessment year 1988-89. Later on, it was withdrawn by the Finance Act, 1990 and then reintroduced by Finance Act, 1996.
- MAT is **calculated at 15% on the book profit** (the profit shown in the profit and loss account) or at the usual corporate rates, and whichever is higher is payable as tax.
- All companies in India, whether domestic or foreign, fall under this provision. MAT was later extended to cover non-corporate entities as well.
- MAT is an important tool with which tax avoidance can be prevented.

### **Domestic Company**

- Domestic company is one which is **registered under the Companies Act of India (2013)** and also includes the company registered in the foreign countries having



control and management wholly situated in India.

- A domestic company includes private as well as public companies.

### Foreign Company

- Foreign company is one which is not registered under the Companies Act of India and has control & management located outside India.

### Tax Heaven

- A tax haven is generally an offshore country that offers foreign individuals and businesses little or no tax liability in a politically and economically static environment.

## 1.14 Currency Chest

Recently, the theft to the tune of Rs 4.04 crore by a private security guard from the **currency chest of Axis Bank in Chandigarh's Sector 34** has put the affairs of currency chests in the spotlight.

### What is Currency Chest?

- The currency chest is a place where the **Reserve Bank of India (RBI) stocks the moneymeant** for banks and ATMs.
- These chests are usually **situated on the premises of different banks.**
- The **money present in the currency chest belongs to the RBI** and the money, kept in the strong room outside the currency chest belongs to the bank.

### Governance of Currency Chest

- The currency chest is **administrated by the Reserve Bank of India (RBI).**
- The representatives of the **RBI inspect currency chests time-to-time**, and update their senior officers about it.

### Recovery of loss in case of a crime resulting in loss of cash

- A bank official has said that as per the set guidelines, **the bank, in which the currency chest is situated, is liable to fulfill the loss** of the currency chest.





- In the cases of **thefts, robberies and fraud from the currency chests** situated within the bank premises, the bank is considered to be responsible.

### Security arrangements for currency chest

- The **security of currency chests** is the subject of the bank in which chests are situated.
- The **Reserve Bank of India (RBI)** reimburses the security expenses to the bank as per the set norms.
- The expenses include the **cost of transportation of cash** from one bank to another.
- A bank may stock in the **currency chest as per its Cash Balance Limit (CBL)**, which differs in every bank.

### 1.15 Surge in Wholesale Price Index (WPI)

Recently, the centre has provided that the **Wholesale-level inflation**, measured by the **WPI or the wholesale price index**, shot up to 7.39 per cent in March on a year-on-year basis.

- The annual rate of inflation stood at **7.39% (provisional) for the month of March, 2021** over March, 2020.
- The rise in WPI in March is the **highest wholesale inflation rate** since October 2012.
- The **prices of crude oil, petroleum products and basic metal** substantially **increased** in March 2021 as compared to the corresponding month of last year.
- The index for this major group **increased by (0.55%) to 146.2 (provisional) in March, 2021** from 145.4 (provisional) for the month of February, 2021.
- The prices of **Crude Petroleum & Natural Gas (8.64%), Non-food Articles (1.90%) and Minerals (0.35%)** increased in March, 2021 as compared to February, 2021.
- The prices of **Food Articles (-0.45%)** declined in March, 2021 as compared to February, 2021.

### What is Wholesale Price Index (WPI)?

- It measures the changes in the **prices of goods sold and traded in bulk** by



wholesale businesses to other businesses.

- The WPI tracks **prices at the wholesale or factory gate/mandi levels** whereas the Consumer Price Index (CPI) looks at the price at which the consumer buys goods.
- The difference between the **wholesale price** and the retail price is the former only **tracks basic prices devoid of transportation cost, taxes and the retail margin etc.**
- The **WPI pertains to only goods**, not services.
- The WPI captures the **average movement of wholesale prices of goods.**
- The WPI is primarily used as a **GDP deflator** (the ratio of the value of goods an economy produces in a particular year at current prices to that of prices that prevailed during the base year).
- The numbers are released by the **Economic Advisor in the Ministry of Commerce and Industry.**
- The **base year was updated to 2011-12** from 2004-05 for the new series of Wholesale Price Index (WPI), effective from April 2017.
- WPI has a sub-index called **WPI Food Index**, which is a combination of the Food Articles from the Primary Articles basket, and the food products from the Manufactured Products basket.

#### **Indication from Wholesale Price Index (WPI)**

- The analysts use the numbers to **track the supply and demand dynamics in industry, manufacturing and construction.**
- An upward surge in the WPI print indicates **inflationary pressure in the economy** and vice versa.
- The quantum of rise in the WPI month-after-month is used to **measure the level of wholesale inflation in the economy.**

#### **Major components of WPI**

- The **primary articles** are a major component of WPI, further subdivided into **Food Articles and Non-Food Articles.**
- The food Articles include items such as **Cereals, Paddy, Wheat, Pulses, Vegetables, Fruits, Milk, Eggs, Meat & Fish, etc.**



- The non-Food Articles include **Oil Seeds, Minerals and Crude Petroleum**
- The next major basket in WPI is **Fuel & Power**, which tracks price movements in Petrol, Diesel and LPG
- The biggest basket is **Manufactured Goods**.
  - It spans across a variety of manufactured products such as **Textiles, Apparels, Paper, Chemicals, Plastic, Cement, Metals**, and more.
  - The manufactured Goods basket also includes manufactured food products such as **Sugar, Tobacco Products, Vegetable and Animal Oils, and Fats**.

### Reasons for surge in WPI

- It was driven largely by **higher prices of crude oil and a surge in price levels of food items** such as pulses and fruits.
- The surge in March was also aided by a **low base in the corresponding month of 2020**.
- The WPI data comes right after the **retail (CPI) inflation scaled a four-month peak of 5.52 per cent** in March.
- The WPI and CPI have shown a **degree of dissonance**, given that the **WPI has a higher weight of manufactured goods** and the CPI has a greater constitution of food items.

### Why surge in WPI is worrisome?

- It is a warning sign given that a higher print of WPI and CPI portends an economic phenomenon of **too much money chasing too few goods and services**.
- There are concerns that the **higher inflation on the wholesale side could eventually spill over to the retail level** in the following months if the new lockdowns and restrictions hit supply chains.

### 1.16 RBI's panel to review ARCs working

Recently, the **Reserve Bank of India (RBI)** has set up a **committee to undertake a comprehensive review** of the working of **asset reconstruction companies (ARCs)**.



- The committee has been set up in the backdrop of **public sector banks working towards setting up a National Asset Reconstruction Company Ltd** to sell large stressed assets of ₹500 crore and above.
- The RBI **rejected the UV ARC's resolution plan for Aircel** as it did not conform to the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act.
- In July 2020, the **RBI advised ARCs to put in place Fair Practices Code (FPC)**, duly approved by their board, in order to achieve the highest standards of transparency and fairness in dealing with stakeholders.

#### **What is the panel to review ARC's working?**

- It is a **six-member committee** which will be headed by **Sudarshan Sen**, former Executive Director of RBI.
- The **other members** are ICICI Bank ED Vishaka Mulye, SBI deputy MD R N Prasad, EY partner Abizer Diwanji, MDI economics professor Rohit Prasad and CA R Anand.
- The panel will **submit their report within three months** of their first meeting.
- The **Department of Regulation (RBI)** will provide the necessary **secretarial support** to the Committee.

#### **Purpose of committee to review ARC's working**

- It aims to review of the **working of ARCs in the financial sector ecosystem**.
- It will **recommend suitable measures** for enabling ARCs to meet the growing requirements.
- It will **review the existing legal and regulatory framework applicable to ARCs** and recommend measures to improve efficacy of ARCs.
- It will **review role of ARCs in resolution of stressed assets** including under Insolvency and Bankruptcy Code (IBC).
- It will give **suggestions for improving liquidity** in and trading of security receipts.
- It has also been asked to **review business models** of the ARCs.

#### **What are Asset Reconstruction Companies (ARCs)?**



- The ARCs are entities that **purchase bad loans from banks and salvage value from them by finding buyers** for the security or selling the business.
- The ARCs are **registered under the RBI** and regulated under the **Securitisation and Reconstruction of Financial Assets and Enforcement of Securities Interest Act, 2002 (SARFAESI Act, 2002)**.
- The ARCs take over a **portion of the debts of the bank** that qualify to be recognised as Non-Performing Assets.
- It implies that the ARCs are **engaged in the business of asset reconstruction or securitisation or both**.
- **All the rights that were held by the lender (the bank)** in respect of the debt would be **transferred to the ARC**.
- In February 2021, the government had said that public sector banks will set up **anational ARC which will buy bad loans from banks** and help clean their books.

#### **Challenges faced by Asset Reconstruction Companies (ARCs)**

- The requirement of the ARC is to have **sufficient availability of funds** to match the huge amount of NPA market.
- The **price expectation mismatch** between selling bank (s) and buying ARC and agreement on an acceptable valuation of the bad assets will create a challenge for ARC.
- It is the **absence of a vibrant distressed debt market in India** which makes it difficult to sell NPA assets in the market.
- There is the **absence of a mature secondary market** for security receipts issued by ARC to Qualified Institutional Buyers.

#### **1.17 Real Time Gross Settlement (RTGS) and the National Electronic Fund Transfer (NEFT)**

Recently, the RBI has proposed to enable, in a phased manner, **payment system operators** like mobile wallets regulated by the central bank to take direct **membership in Real Time Gross settlement (RTGS) and the National Electronic Fund Transfer (NEFT)**.

#### **RTGS and NEFT**



- The **RTGS system** is meant for **large-value instantaneous fund transfers**, while the **national electronic funds transfer (NEFT) system** is used for **fund transfers of up to Rs 2 lakh**.
- The National Electronic Funds Transfer (NEFT) is a payment system that **facilitates one-to-one funds transfer**.
- Using NEFT, **people can electronically transfer money from any bank branch to a person** holding an account with any other bank branch, which is participating in the payment system.

### Proposal of RBI for RTGS and NEFT

- The RBI proposed that anyone will be able to **send money online, or withdraw cash, using a mobile wallet or any non-bank entity** through RTGS and NEFT.
- It is expected to **minimise settlement risk in the financial system** and enhance the reach of digital financial services to all user segments.
- These entities will **not be eligible for any liquidity facility from RBI** to facilitate settlement of their transactions in these CPSs.
- The facility will be **subject to an overall limit of Rs 2 lakh for non-banks**.

### Implications of RBI proposal

- The experts say that just as use of UPI increased since it was **opened to third-party aggregators**, opening the payment system to non-banks would increase digital payments and transactions significantly.
- It will **prepare a digital trail of all individuals doing digital transactions** on channels outside the banking system, which could help the overall financial system.
- The **credit profile can also be tracked while taking a loan** from a financial technology (Fintech) company, investing through it or spending through it.

### Who can now undertake online transfers?

- The RBI will now allow non-bank entities such as **Prepaid Payment Instrument (PPI) issuers, Card Networks, White Label ATM operators, Trade Receivables Discounting System (TReDS) platforms** to become members of CPS.
- The mobile wallets like **Google Pay, Mobikwik, PayU, Ola Money, PhonePe and Amazon Pay** can provide NEFT and RTGS facilities to their customers.





- The transfer will be allowed **only to KYC (know your customer)-compliant entities.**

### 1.18 India's oil and gas production is falling

**India's crude oil and natural gas production have been falling consistently** since 2011-12 with Covid-19 related delays are among the key reasons cited by producers behind lower production.

#### Reasons for falling oil and gas production

- The experts have noted that most of **India's crude oil and natural gas production comes from ageing wells** that have become less productive over time.
- There was **no more easy oil and gas available in India** and producers would have to invest in extracting oil and gas using technologically intensive means from more difficult fields such as ultra-deep water fields.
- The experts noted that the **interest from foreign payers in oil and gas exploration** in India had been low.
- The crude oil production in India is **dominated by two major state-owned exploration and production companies**, ONGC and Oil India.

#### Reasons for lack of private participation in India's oil and gas production

- The experts believe that the low private participation in India's upstream oil and gas sector is mainly due to **delays in the operationalisation of hydrocarbon blocks.**
- It is due to **delays in major clearances including environmental clearances and approval by the regulator of field development plans** that make private players reluctant to participate in oil and gas production.
- The industry players have been calling for a **reduction in the cess on domestically produced crude oil** to 10 per cent from the current 20 per cent.
- The **internal maximum production levels** set by oil and gas majors to address climate change had also **lowered interest by oil majors to expand operations in India.**

#### Recommendation of government to increase oil and gas production

- The government has asked ONGC to **boost its investments in explorations and increase tie-ups with foreign players** to provide technological support in extracting oil and gas from difficult oil and gas fields.
- The government may consider providing **fiscal incentives to attract foreign players** to India's upstream sector.
- The boost in oil and gas production has also been a **key part of the Aatmanirbhar Bharat initiative** and its goal to boost the use of natural gas in India's primary energy mix from the current 6.2 per cent to 15 per cent by 2030.

### Impact of low oil and gas production

- The low domestic production of crude oil and natural gas **makes India more reliant on imports.**
- It **increases the India's Current Account Deficit** as well as **Fiscal deficit** due to heavy dependence on imports.
- The share of imports as a proportion of overall crude oil consumption in India has **risen from 81.8 per cent in FY2012 to 87.6 per cent in FY2020.**

### 1.19 Codex Committee on Spices and Culinary Herbs (CCSCH)



Recently, the **Food Safety and Standards Authority of India (FSSAI)** inaugurated the **fifth session of the Codex Committee on Spices and Culinary Herbs (CCSCH)** established under **Codex Alimentarius Commission (CAC)**.

- **Codex Committee on Spices and Culinary Herbs (CCSCH):**
  - **Establishment:** It was formed in **2013**.

- **Terms of Reference:**
  - To **elaborate worldwide standards for spices and culinary herbs** in their dried and dehydrated state in whole, ground, and cracked or crushed form.
  - To **consult, as necessary, with other international organizations** in the standards development process to avoid duplication.
- **Host:**
  - **India is the host country and Spices Board India** is the **Secretariat** for organising the **sessions of the committee.**
    - **Spices Board (Ministry of Commerce and Industry)** is the flagship organization for the development and worldwide promotion of Indian spices.
- **Codex Alimentarius Commission (CAC):**
  - It is an **intergovernmental body** established jointly by the **UN's Food and Agriculture Organisation (FAO)** and the **World Health Organisation (WHO)** in **1963**, within the framework of the **Joint Food Standards Programme.**
  - The **Secretariat of the CAC** is hosted at **FAO headquarters in Rome.**
  - It was **established to protect the health of consumers** and ensure fair practices in the food trade.
  - It **meets in regular session once a year** alternating between Geneva and Rome.
  - **Members:**
    - Currently, it has **189 Codex Members** made up of 188 Member Countries and 1 Member Organization (**The European Union**).
    - **India is a member.**
  - **Food Standards:**
    - The **Codex Alimentarius is a collection of international food**

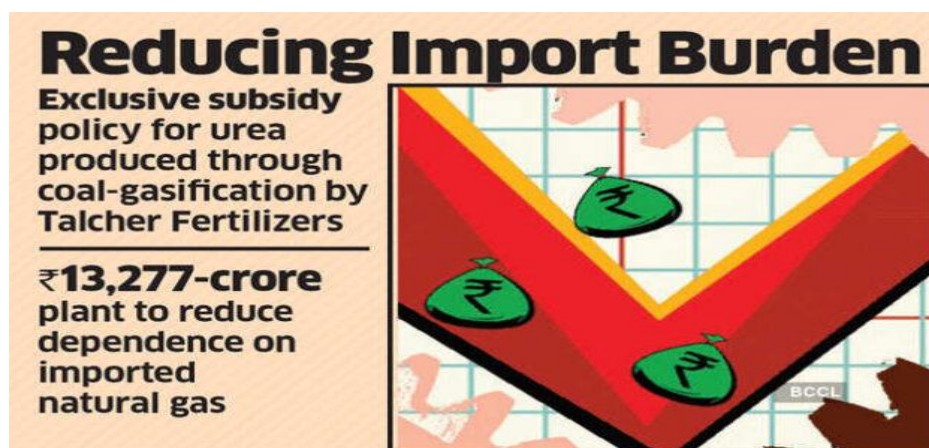
**standards** that have been adopted by the CAC.

- Codex Standards **cover all the main foods**, whether processed, semi-processed or raw.
  - In addition, materials used in the further processing of food products are included to the extent necessary for achieving the principal objectives of the code.
- Codex provisions **concern the hygienic and nutritional quality of food**, including microbiological norms, food additives, pesticide and **veterinary drug residues, contaminants, labelling and presentation**, and methods of sampling and risk analysis.
- **Food Safety and Standards Authority of India (FSSAI) :**
  - **Establishment:**
    - FSSAI is an autonomous **statutory body** established under the **Food Safety and Standards Act, 2006 (FSS Act)**. It is **headquartered in Delhi**.
  - **Administrative Ministry:**
    - Ministry of Health & Family Welfare.
  - **Functions:**
    - **Framing of regulations** to lay down the standards and guidelines of **food safety**.
    - **Granting FSSAI food safety license** and certification for food businesses.
    - **Laying down procedure** and guidelines for laboratories in **food businesses**.
    - **To provide suggestions** to the government in framing **the policies**.
    - **To collect data** regarding contaminants in foods products, identification of emerging risks and introduction of a **rapid alert system**.
    - **Creating an information** network across the country about food

safety.

- **Promote general awareness** about food safety and food standards.

## 1.20 Govt approves subsidy policy for urea produced through coal gasification



The Cabinet has approved an exclusive subsidy policy for urea produced through coal gasification by Talcher Fertilizers Limited (TFL).

- Urea is a widely used fertiliser in India.
- TFL Urea Project:
  - **Capacity and Location:** TFL is setting up the 1.27 million tonne per annum capacity urea plant based on coal gasification technology in Odisha with an estimated investment of Rs. 13,277 crore.
    - This will be the only plant to produce the nitrogenous soil nutrient (urea) through coal gasification route.
    - Talcher Fertilizers Ltd. (TFL) is a Joint Venture Company of four PSUs (Public Sector Undertakings) namely Rashtriya Chemicals & Fertilizers (RCF), GAIL (India) Ltd. (GAIL), Coal India Ltd. (CIL) and Fertilizer Corporation of India Ltd. (FCIL).
  - **Expected Benefits:**
    - The project will improve availability of fertilizer to farmers thereby boosting development of eastern region and

will save transport subsidy for supply of urea in eastern part of the country.

- It would **assist in reducing Urea imports** to the tune of 12.7 LMT (Lakh Metric Tonnes) per annum leading to savings in foreign exchange.
- It will also give a boost to the **‘Make in India’ initiative** and **‘Atmanirbhar Bharat’ campaign** and would help development of infrastructure like roads, railways etc.
- It will also **provide new business opportunities** in the form of ancillary industries in the catchment area of the project.

#### • **Coal Gasification:**

Coal gasification is the **process of converting coal into synthesis gas** (also called syngas), which is a mixture of hydrogen ( $H_2$ ), carbon monoxide (CO) and carbon dioxide ( $CO_2$ ).

- The syngas **can be used in a variety of applications** such as in the production of electricity and making chemical products, such as fertilisers.
- The **hydrogen** obtained from coal gasification can be used for various purposes such as making **ammonia**, powering a hydrogen economy.

- The **ammonia is reacted with the carbon dioxide** to produce **urea melt**.
- **In-situ gasification of coal**—or **Underground Coal Gasification (UCG)**—is the technique of converting coal into gas while it is still in the seam and then extracting it through wells.
- **India has set the target** that by 2030 it will gasify 100 million tonne of coal under four major projects with an overall investment of Rs. 20,000 crore.

#### • **Fertilizer Consumption in India:**

- **India’s fertiliser consumption in FY20** was about 61 million tonne — of which **55% was urea**—and is estimated to have increased by 5 million tonne in FY21.
- Since **non-urea (MoP, DAP, complex) varieties cost higher**,



many **farmers prefer to use more urea** than actually needed.

- The government has taken a number of **measures to reduce urea consumption**. It introduced **neem-coated urea** to reduce illegal diversion of urea for non-agricultural uses. It also stepped up the **promotion of organic and zero-budget farming**.
- **Subsidy on Urea:** The Centre pays **subsidy on urea to fertiliser manufacturers on the basis of cost of production at each plant** and the units are required to sell the fertiliser at the government-set Maximum Retail Price (MRP).
- **Subsidy on Non-Urea Fertilisers:** The **MRPs of non-urea fertilisers are decontrolled** or fixed by the companies. The Centre, however, pays a **flat per-tonne subsidy** on these nutrients to ensure they are priced at “reasonable levels”.

Raja Sir's Cracking IAS Academy  
 • **Examples of non-urea fertilisers:** Di-Ammonium Phosphate (DAP), Muriate of Potash (MOP)

### 1.21 New SEBI rule for fund manager compensation

Recently, the **Securities and Exchange Board of India (SEBI)** has said that a **minimum 20% of the compensation of mutual fund managers** in an asset management company (AMC) should be in the form of units of the mutual fund schemes they manage.

#### Changes announced by SEBI

- The SEBI has specified the **rules of allocation of this 20%** by saying that it should be **proportional to the assets under management of the schemes** in which an employee has a role or oversight.
- The SEBI has also said that a **fund manager who manages only one fund will have at least 50%** of this type of compensation in the scheme she manages.
- The regulator has also specified that the **units offered by way of compensation are locked-in for three years**.

#### Reasons for changes announced by SEBI

- The primary objective of new rule is to **align the interest of the key employees of**





the AMCs with the unit holders of the mutual fund schemes.

- The SEBI wants fund managers to have **skin in the game, or demonstrate to investors that they have confidence in the schemes** they manage.

#### Implication of new SEBI rule on investors

- The move by SEBI will **boost the transparency of fund manager compensation** and also helps **build accountability**.
- It ensures that **fund houses actually link the pay of fund managers to performance** and go beyond lip service.
- It could **encourage whistleblowing** if wrongdoing is happening.
- It will give a lot of **psychological comfort to investors** that their fund manager has skin in the game.

#### Arguments from Mutual Fund industry against new SEBI rule

- The common refrain from mutual fund CEOs has been that SEBI's intention is good but the **rules are too clunky to follow**.
- The rule by SEBI, which in effect specifies percentages of investments in different schemes, could **conflict with the personal finance goals of the fund managers**.
- It could even lead to a **flight of talent** from the industry.

#### Securities and Exchange Board of India (SEBI)

- It was **established on April 12, 1992** in accordance with the provisions of the **Securities and Exchange Board of India Act, 1992**.
- It is a **statutory body** which is constituted as the **regulator of capital markets** in India under a resolution of the Government of India.
- It is the **regulator of the securities and commodity market in India** owned by the Government of India.
- Its aim is to **protect the interests of investors in securities** and to **promote the development** of, and to regulate the securities market.

#### Powers of SEBI

- **Quasi-judicial powers:** In cases of frauds and unethical practices pertaining to the



securities market, SEBI India has the power to pass judgements.

- **Quasi-executive powers:** SEBI has the power to examine the Book of Accounts and other vital documents to identify or gather evidence against violations.
- **Quasi-Legislative powers:** To protect the interest of investors, the authoritative body has been entrusted with the power to formulate suitable rules and regulations.

## 1.22 Index of Eight Core Sector Industries

Recently, the **Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade (DPIIT)** has released **Index of Eight Core Industries** for the Month of March, 2021.

### Key Highlights

- The **combined Index of Eight Core Industries stood at 143.1** in March, 2021, which **increased by 6.8 (provisional) per cent** as compared to the Index of March, 2020.
- Its **cumulative growth** during April to March, 2020-21 has been **(-) 7.0%**.
- The **final growth rate** of Index of Eight Core Industries for December 2020 is revised to **0.4% from its provisional level (-) 1.3%**.
- **Coal:** Coal production (weight: 10.33 per cent) **declined by 21.9 per cent** in March, 2021 over March, 2020.
  - Its **cumulative index declined by 4.8 per cent** during April to March, 2020-21 over corresponding period of the previous year.
- **Crude Oil:** The Crude Oil production (weight: 8.98 per cent) **declined by 3.1 per cent** in March, 2021 over March, 2020.
  - Its **cumulative index declined by 5.2 per cent** during April to March, 2020-21 over the corresponding period of previous year.
- **Natural Gas:** The Natural Gas production (weight: 6.88 per cent) **increased by 12.3 per cent** in March, 2021 over March, 2020.
  - Its **cumulative index declined by 8.2 per cent** during April to March, 2020-21 over the corresponding period of previous year.



- **Petroleum Refinery Products:** The Petroleum Refinery production (weight: 28.04 per cent) **declined by 0.7 per cent** in March, 2021 over March, 2020.
  - Its **cumulative index declined by 11.2 per cent** during April to March, 2020-21 over the corresponding period of previous year.
- **Fertilizers:** The fertilizers production (weight: 2.63 per cent) **declined by 5.0 per cent** in March, 2021 over March, 2020.
  - Its **cumulative index increased by 1.8 per cent** during April to March, 2020-21 over the corresponding period of previous year.
- **Steel:** The steel production (weight: 17.92 per cent) **increased by 23.0 per cent** in March, 2021 over March, 2020.
  - Its **cumulative index declined by 9.5 per cent** during April to March, 2020-21 over the corresponding period of previous year.
- **Cement:** The cement production (weight: 5.37 per cent) **increased by 32.5 per cent** in March, 2021 over March, 2020.
  - Its **cumulative index declined by 11.9 per cent** during April to March, 2020-21 over the corresponding period of previous year.
- **Electricity:** The electricity generation (weight: 19.85 per cent) **increased by 21.6 per cent** in March, 2021 over March, 2020.
  - Its **cumulative index declined by 0.6 per cent** during April to March, 2020-21 over the corresponding period of previous year.

### Index of Industrial Production (IIP)

- It is an **index of the eight most fundamental industrial sectors** of the Indian economy and it **maps the volume of production** in these industries.
- The industries included are **Coal, Natural Gas, Crude Oil, Refinery Products (such as Petrol and Diesel), Fertilisers, Steel, Cement and Electricity.**
- The Eight Core Industries **comprise 40.27 per cent of the weight of items** included in the Index of Industrial Production (IIP).
- The base year of the ICI has been revised to **2011-12 from 2004-05** in alignment with the new series of IIP.



## INDIA AND WORLD

### 2.1 Exercise Shantir Ogroshena

Recently, the Ministry of Defence has announced that the **Indian Army** will participate in the **Exercise Shantir Ogroshena-2021**.

#### Exercise Shantir Ogroshena

- The Exercise Shantir Ogroshena (**Front Runner of the Peace**) is a **multinational military exercise**.
- The 2021 edition of Exercise Shantir Ogroshena will be **held in Bangladesh** to commemorate the birth centenary of **Bangladesh 'Father of the Nation' Bangabandhu Sheikh Mujibur Rahman**.
- The theme of the exercise is "**Robust Peace Keeping Operations**".
- The military observers from **USA, UK, Turkey, Kingdom of Saudi Arabia, Kuwait and Singapore** will also be in attendance throughout the exercise.
- The participants of Exercise Shantir Ogroshena -2021 will be the **DOGRA Regiment of Indian Army** along with contingent of **Royal Bhutan Army, Sri Lankan Army and Bangladesh Army**.

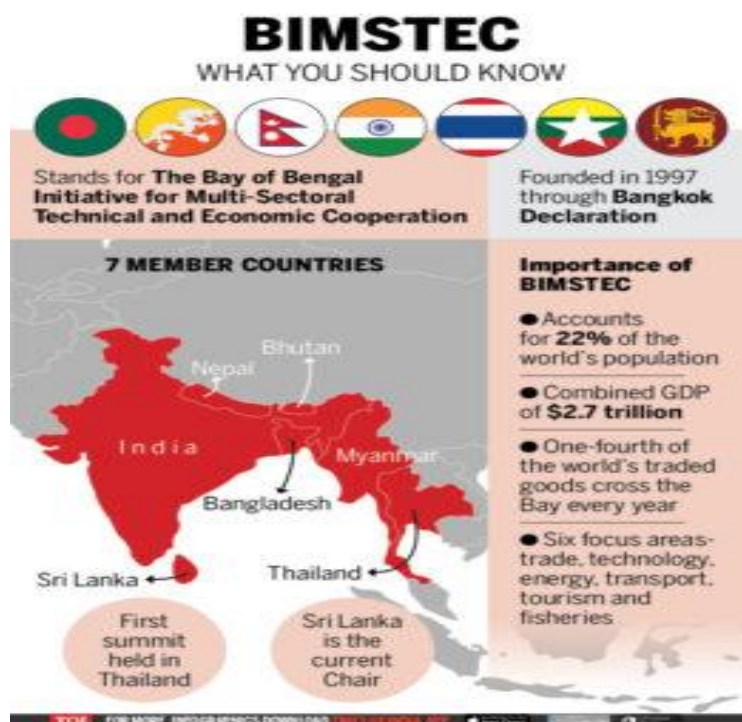
#### Significance of Joint Military Exercises

- It is an indication of the **highest level of trust and confidence** between the member nations.
- It is a key **confidence building measure (CBM)** and an indication of the faith reposed by India on another nation or a group of member nations.
- The military exercises **enable militaries to understand each other's drills and procedures, overcome language barriers**, and facilitate familiarisation with equipment capabilities.
- It facilitates **understanding and familiarisation with new technologies** that other countries may be utilising and enables on-the-job training of each other's crews.
- A joint exercise with one or more nations serves the **purpose of signalling to a third country of the influence India has in the region** and a demonstration of India's resolve to further our diplomatic objectives.

## 2.2 Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)

Recently, the External Affairs has underlined the importance of connectivity between members of the **Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)**, which marks its silver jubilee next year.

- It is a **regional organization** comprising seven **Member States** lying in the **littoral and adjacent areas of the Bay of Bengal** constituting a contiguous regional unity.
- It came into being in 1997 through the **Bangkok Declaration** and headquartered in **Dhaka**.
- It constitutes seven Member States: **five deriving from South Asia**, including **Bangladesh, Bhutan, India, Nepal, Sri Lanka**, and **two from Southeast Asia**, including **Myanmar and Thailand**.
- Formally, the economic bloc was formed with **four Member States** with the acronym '**BIST-EC**' (**B**angladesh, **I**ndia, **S**ri Lanka and **T**hailand Economic Cooperation).





### Significance of BIMSTEC

- The regional group **constitutes a bridge between South and South East Asia** and represents a reinforcement of relations among these countries.
- The BIMSTEC has also established a platform for **intra-regional cooperation between SAARC and ASEAN members**.
- The BIMSTEC region is **home to around 1.5 billion people** which constitute around **22% of the global population** with a combined **gross domestic product (GDP) of 2.7 trillion economy**.
- Its objective is to **harness shared and accelerated growth** through mutual cooperation in different areas of common interests by mitigating the onslaught of globalization.
- The Bay of Bengal has grown in **strategic significance within the Indo-Pacific**, especially due to the contest between India and China.

### Importance of BIMSTEC for India

- In 2016, India held a joint **BRICS-BIMSTEC Summit** in Goa for the latter's regional outreach and after this, the support for BIMSTEC gained further momentum.
- An **India-Myanmar-Thailand highway** is one of the key projects that figures in a big way in the government's Act East (earlier Look East) policy.
- The groupings such as BIMSTEC can take forward the **concept of regional cooperation in a different manner** with the India-Pakistan bickering coming in way of a smooth functioning of the SAARC.

### Challenges faced by BIMSTEC

- It has come under **scrutiny mainly due to dormancy** in initial years and a stalled Free Trade Agreement (FTA) process.
- The **lack of involvement of Malaysia, Singapore and Indonesia in BIMSTEC**, even as dialogue partners has also been a point of contention.
- **India aggressively pushed for the conclusion of a long-pending FTA** among BIMSTEC nations but differences between India and Thailand over market access for professionals, duty cuts on traded goods and policy relaxation stalled the





process.

- BIMSTEC has been slow on the come-up because unlike bodies like the EU or ASEAN, it is based on **consensus-building which takes time**.

### 2.3 CM Kejriwal to attend World Cities Culture Forum

The **Chief Minister of Delhi will represent Delhi and India at the World Cities Culture Forum (WCCF)**.

- The **date for this year's annual summit is yet to be announced** on the forum's website.
- **Establishment:** WCCF was **established in London in 2012** with eight cities.
- **Member Cities:** It has **43 participating member cities**.
  - Participating member cities include London, Hong Kong, Amsterdam, Edinburgh, Lisbon, San Francisco, Shanghai, etc.
  - **Delhi** is invited this year but **it is not a part of member cities**.
- **Role:** It enables the policy makers of member cities to **share research and intelligence**, and **explores the vital role of culture** in their future prosperity.
- **Managed By:** The activities of the World Cities Culture Forum are **organised and delivered by BOP Consulting**, a specialist consulting firm, on behalf of the **Greater London Authority**, London's Municipal Government.
  - **BOP** conducts comparative research to measure the impact and importance of culture and creativity, and shares it with the Forum so members can make evidence-based policy decisions.
- **World Cities Culture Summit:** Forum members collaborate via a programme of events including themed symposia, regional summits and workshops. These events feed into the annual **World Cities Culture Summit**.
  - Hosted on a rotating basis by member cities, **this unique gathering** allows city leaders to share ideas and knowledge about the role of culture as an organising principle for the sustainable city of the future.
  - It is **attended by Deputy Mayors for Culture and Heads of Culture** from the member cities.





- **2021 Theme:** The Future of Culture.

- **World Cities Culture Report:** Delhi will also be part of the **World Cities Culture Report** – the most comprehensive **global dataset on culture in cities**.
  - It is **published by the forum every three years**, with data and details on innovative projects from cities across the world. The last report was published in **2018**.

## 2.4 La Perouse Joint Exercise

Recently, the navies and aircraft of India, the US, Japan and Australia will be participating in **La Perouse Joint Exercise**.

- The role of the **QUAD navies in the IOR (Indian Ocean Region)** has been well illustrated by the effective cooperative engagement capabilities of the multi-national naval powers through naval exercises.
- In 2020, the **MALABAR exercise** had a full QUAD naval task force representation with the Australian warships too participating.
- With the **Indo-US LEMOA (Logistics Exchange Memorandum of Agreement)** in place, the US warships (including aircraft carriers) can get berths for refueling and repairs within the Indian ports.
- The interoperability amongst the QUAD Task Force too shall be possible when **COMCASA (Communications Compatibility and Security Agreement)** and **BECA (Basic Exchange and Cooperation Agreement)** are implemented in total.

### La Perouse Joint Exercise

- It is a **French multinational naval exercise**.
- It is named after the **eighteenth century French Naval explorer**.
- The **first edition** of the La Pérouse joint exercise was initiated by **France in 2019** which included ships from **Australia, Japan and the USA**.
- It is for the **first time that Indian warships shall be participating** in La Perouse exercise 2021.
  - The government of India has said that the **Indian naval ships Satpura**

and **Kiltan** along with **P-8I long-range maritime patrol aircraft** are participating in the exercise.

- The exercise will showcase **high levels of synergy, coordination and interoperability** between the friendly navies.

### Naval Significance of Indo-Pacific

- The **Naval diplomacy** being displayed by India is an indicator of this shaping dynamics in the Indo-Pacific.
- The Indian Navy has always **maintained a tactical advantage over the IOR** to ensure compliance to the internationally established Rules of the Road (ROR) for the seas.
- The **Indo-Pacific is turning into a serious Naval Theatre** for multi-national activities in order to establish a free, open, inclusive and a rule-based ordering of the Indo-Pacific.
- It aims to support the **freedom of navigation and peaceful cooperative use** of the seas.
- The goal is to **respect and adhere to the international laws** like the United Nations Convention on the Law of the Sea (UNCLOS) and peaceful resolution of territorial sea disputes.

### 2.5 E9 Initiative

Recently, Minister of State for Education will be attending consultation meeting of **Education Ministers of E9 countries on E9 initiative: Scaling up digital learning to accelerate progress towards SDG4.**

#### E9 Initiative

- It is a **forum of nine countries**, which was formed to achieve the goals of UNESCO's **Education For All (EFA) initiative**.
- It is spearheaded by the **United Nations** with nine countries, namely **Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Nigeria and Pakistan**.
- The forum represents over **half of the world's population** and **70% of the world's**



### illiterate adults.

- It was launched in **1993** at the **UNESCO's Education For All (EFA) Summit** in New Delhi, India.
- It has become a forum for the countries to discuss their experiences related to **education, exchange best practices, and monitor EFA-related progress.**

### Significance of E9 Initiative

- It aims to **accelerate recovery and advance the Sustainable Development Goal 4** agenda by driving rapid change in education systems in three of the 2020 Global Education Meeting priorities:
  - Support to teachers;
  - Investment in skills; and
  - Narrowing of the digital divide
- The consultation is the **first of a three-phased process** to co-create an initiative on digital learning and skills, targeting marginalised children and youth, especially girls.
- It aims to explore possibility of **co-creating and scaling up digital learning** to achieve UN sustainable goal on quality education.
- The consultation will **highlight progress, share lessons and explore opportunities** for collaboration and scale-up to expand digital learning and skills.

### 2.6 BRICS Finance Ministers and Central Bank Governors Meet

Recently, **India** hosted the first meeting of the **BRICS Finance Ministers and Central Bank Governors.**

#### Key Highlights

- India's approach as 2021 BRICS chair was focused on **strengthening intra-BRICS cooperation** based on Continuity, Consolidation and Consensus.
- It is the **first meeting of the BRICS Finance Ministers and Central Bank Governors** under India Chairmanship in 2021.
- The BRICS Finance Ministers and Central Bank Governors discussed **financial**



**cooperation agenda set by India for 2021** included:

- Global Economic Outlook and Response to COVID-19 pandemic,
  - New Development Bank (NDB) Activities,
  - Social Infrastructure Financing and Use of Digital Technologies,
  - Cooperation on Customs related issues,
  - IMF reforms,
  - Fintech for SMEs and Financial Inclusion,
  - BRICS Rapid Information Security channel and BRICS Bond Fund
- India has emphasised the **importance of BRICS in responding to the COVID-19 crisis** through policy support and enhancing international coordination.
  - The Finance Minister **stressed on the need for assessment of the \$100 billion commitment per year** from developed countries to developing countries for strengthening climate action.
  - The meeting emphasised that the **focus on climate change should be both on mitigation** and on **strengthening adaptation measures**.

## **BRICS**

- It is an **informal group of states** comprising the **Federative Republic of Brazil, the Russian Federation, the Republic of India, the People's Republic of China and the Republic of South Africa**.
- It was the **Russian side** that initiated the creation of BRICS.
- In 2006, the **first BRICS Ministerial Meeting** was held at the proposal of Russian President Vladimir Putin on the margins of a UN General Assembly Session in New York.
- In 2009, Yekaterinburg hosted the **first BRIC Summit**.
- BRICS countries are **influential members of leading international organisations and agencies**, including the UN, the G20, the Non-Aligned Movement and the Group of 77.
  - The **Russian Federation** is a member of the Commonwealth of Independent States, the Collective Security Treaty Organisation and the

Eurasian Economic Union.

- **Russia, India and China** are members of the Shanghai Cooperation Organisation and the Asia Pacific Economic Cooperation.
- **Brazil** is a member of the Union of South American Nations, MERCOSUR and the Community of Latin American and Caribbean States.
- **The Republic of South Africa** is a member of the African Union and the Southern African Development Community.
- **India** is a member of the South Asian Association for Regional Cooperation and BIMSTEC.

### Importance of BRICS for India

- The one of the factors behind the **persistence of international institutions is because of “sunk costs”** i.e. efforts expended to set up an institution that cannot be recovered and binding the actors involved in setting it up permanently.
  - New Delhi has often **equated BRICS with its participation in other “Western-led” groupings** such as the Quad, in order to signal to domestic constituencies that its commitment to strategic autonomy remains intact.
  - The “cost” India would pay from dissolving the BRICS is far **higher than simply playing along**, despite its diminishing dividends from participation in that grouping.
- The BRICS also allows India and China to **modulate their rivalry within the setting of a small grouping**, even when bilateral relations remain rocky.
  - The groupings like the BRICS and the SCO afford both **India and China the opportunity to “decouple” their strategic contest** from the other dimensions of the relationship.
- BRICS provides India a **transcontinental reach by virtue of Brazil and South Africa’s presence**.
- India is a proudly **revisionist power when it comes to the extant structure** of international organizations and the United Nations system.
  - It continues to maintain that the **international system does not recognize**



the country's economic and political heft and demands top-down reform, beginning with the U.N. Security Council (UNSC) where it seeks permanent membership.

## 2.7 India-Seychelles High Level Virtual Event

Recently, the **Prime Minister of India** will take part in a high level virtual event with the **President of the Republic of Seychelles**.

### Key Highlights

- The high level virtual event will feature the following:

#### Joint e-inauguration of the new Magistrates' Court Building in Seychelles

- The **new Magistrates' Court Building in the capital city Victoria** is India's first major civil infrastructure project in Seychelles built with grant assistance.
- The Magistrates' Court is a **state of the art building** which will substantially enhance the capacity of the Seychelles judicial system and aid in better delivery of judicial services to the people of Seychelles.

#### Handing over of a Fast Patrol Vessel to Seychelles Coast Guard

- It is a **50-m Fast Patrol Vessel**, which is a modern and fully equipped naval ship.
- It is named as '**PS Zoroaster**' and is the fourth ship to be gifted by India to Seychelles to strengthen its maritime surveillance capabilities.
  - The other vessels gifted by India include **PS Topaz (2005)**, **PS Constant (2014)**, **Patrol Boat Hermes (2016)**.
- It has been made in India by M/s **Garden Reach Shipbuilders and Engineers (GRSE)**, Kolkata.
- It is being **gifted to Seychelles** under Indian grant assistance to strengthen its maritime surveillance capabilities.

#### Handing over of a 1 MW Solar Power Plant

- The **1 MW ground-mounted solar power plant** at the **Romainville Island** of



Seychelles has been completed.

- It is a part of the **'Solar PV Democratization Project'** which is being implemented in Seychelles by the Government of India under grant assistance.

### **Inauguration of 10 High Impact Community Development Projects (HICDPs)**

- It will be implemented by the **High Commission of India** in collaboration with local bodies, educational and vocational institutions.
- They aimed at implementing **small people-oriented projects** which contribute significantly towards the **socio-economic development and improvement of local communities**.

### **Significance of India-Seychelles relationship**

- Seychelles occupies a central place in the **Prime Minister's vision of 'SAGAR' – 'Security and Growth for All in the Region'** and **'Neighbourhood First Policy'**.
- The inauguration of these key projects demonstrates **India's privileged and time-tested role as a reliable partner of Seychelles** for meeting its infrastructural, developmental and security requirements.
- It is a **testimony to the deep and friendly ties** between the people of India and Seychelles.
- India's economic and security outreach, and the leveling out of its relations with island nations in its neighborhood, is also aimed at **rebuilding supply chains** that have been ruptured by the pandemic.
- India is seeking to **recalibrate the global supply chain system** through alternatives to the Beijing-led Belt and Road Initiative.
- The Seychelles' importance is high for India as New Delhi strives to **tackle piracy in the Western Indian Ocean** as well as battle terrorist threats from the sea.
- Seychelles also forms a **crucial part of India's overall Africa outreach and in its Indo-Pacific vision** of free, open, and rules-based maritime order.

### **2.8 Singapore calls for India's reassessment of regional trade pacts**

Recently, the Singapore's Foreign Minister has said he hopes that India will "reassess" its stand on regional trading agreements such as the **Regional Comprehensive Economic**





**Partnership (RCEP) pact and Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).**

### **Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)**

- It is a free trade agreement (FTA) between **Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, Peru, New Zealand, Singapore and Vietnam.**
- It was **signed by 11 countries in 2018** in Santiago, Chile.
- The CPTPP entered into force in 2018 for **Australia, Canada, Japan, Mexico, New Zealand and Singapore** and in 2019 for **Vietnam.**
- The CPTPP will enter into force for **Brunei Darussalam, Chile, Malaysia and Peru 60 days after they complete** their respective ratification processes.
- The 11 countries have a **shared vision of the CPTPP as a platform** that is open to others to join if they are able to meet its high standards.

### **Features of Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)**

- It is a **separate treaty that incorporates**, by reference, the provisions of the **Trans-Pacific Partnership (TPP) Agreement.**
- The CPTPP ensures that the **substantial market access package secured** in the original TPP is maintained.
- The market access package will be **implemented among the CPTPP Parties**, delivering major new opportunities for Australian exporters, investors and firms engaged in international business.
- The CPTPP maintains the **ambitious scope and high quality standards and rules** of the original TPP.
- It recognises the challenges facing **Small and Medium-sized enterprises (SMEs)** in establishing export markets, and include outcomes to help make this task easier in the CPTPP region.

### **India's stand on Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)**

- India is one of the largest economies in the region and has historically been

very **reluctant to allow foreign competitors to sell products** in its domestic markets.

- The countries like **India have vacillated over such global trade deals** because the US has expressed serious disdain for multilateral groupings.
- India decided to **not even participate in TPP discussions with China not being a party to it** and on the other hand, it chose to negotiate the RCEP where China was the fulcrum.

### **Regional Comprehensive Economic Partnership (RCEP)**

- It is the **world's largest free trade bloc** which is comprised of **10 ASEAN members, South Korea, China, Japan, Australia and New Zealand**.
- RCEP will account for **30% of the global economy, 30% of the global population and reach 2.2 billion consumers**.
- The deal marks the **first time rival East Asian powers China, Japan and South Korea** have been in a single free trade agreement.
- RCEP will help **reduce or remove tariffs on industrial and agricultural products** and set out rules for data transmission.
- The mega trade bloc is a landmark trade initiative which is expected to **boost commerce among the member-countries** spread across the Asia-Pacific region.

### **2.9 Hot Springs and Gogra Post**

Recently, **China had refused to vacate two of the four original friction points** during the 11th round of discussions between the senior military commanders of India and China.

- At two friction points, **Patrolling Point 15 (PP15) in Hot Springs, and PP17A near Gogra Post**, China still has a platoon-level strength each, along with vehicles.
- In May 2020, China had diverted its troops towards the **Line of Actual Control (LAC) in eastern Ladakh**.
- It created a standoff with India and **PP15 and PP17A were two of the four points** where the soldiers were eyeball-to-eyeball.
  - The other points of friction at that time were **PP14 in Galwan Valley and the north bank of Pangong Tso**.



- The maximum ingress was on the **north bank of Pangong Tso**, where the **Chinese troops were at Finger 4**, which is 8 km west of Finger 8 where India says the LAC lies.

### What are Hot Springs and Gogra Post?

- Along the Line of Actual Control (LAC) between India in China, Indian Army has been given **certain locations that its troops have to access to patrol the area under its control**.
- The above mentioned **patrolling areas** are known as **patrolling points, or PPs**, and are decided by the **China Study Group (CSG)**.
  - **CSG was set-up in 1976**, when Indira Gandhi was the prime minister, and is the apex decision-making body on China.
- The **patrolling points are on the LAC** barring certain areas, like Depsang Plains and troops access these points to assert their control over the territory.
- It is an **important exercise** since the boundary between **India and China is not yet officially demarcated**.
- PP15 and PP17A are **two of the 65 patrolling points** in Ladakh along the LAC.
  - **PP15** is located in an area known as the **Hot Springs**, while **PP17A** is near an area called the **Gogra post**.

### Location of PP15 and PP17A

- These patrolling points are close to the **Chang Chenmo River in the Galwan** sub-sector of the LAC in eastern Ladakh.
- The **Hot Springs** is just north of the **Chang Chenmo River** and the **Gogra Post is east of the point** where the river takes a hairpin bend coming southeast from Galwan Valley and turning southwest.
- The area is **north of the Karakoram Range of mountains**, which lies **north of the Pangong Tso Lake**, and **south east of Galwan Valley**.

### Significance of Hot Springs and Gogra Post

- The area lies close to **Kongka Pass** and according to China, the Kongka Pass marks the boundary between India and China.
- India's claim of the **international boundary lies significantly east**, as it includes



the entire Aksai Chin area as well.

- The official negotiations on the boundary between India and China in 1960 had with **Kongka Pass as the dividing point** and the portion **north of Kongka Pass is the boundary between Sinkiang (now Xinjiang) and Ladakh**, and the portion **south of it is that between Tibet and Ladakh**.
- The Hot Springs and Gogra Post are **close to the boundary between two of the most historically disturbed provinces** of China.

### Importance of Hot Springs and Gogra Post for Military

- The PP15 and PP17A are in an area where **India and China largely agree on the alignment of the LAC**, which comes southeast from Galwan Valley, turns down at Konga La and moves towards Ann Pass before reaching the north bank of Pangong Tso.
- China has a major post of the **People's Liberation Army a few km east of Kongka La**, while Indian posts lie southwest of it.
- The official history notes that the Chinese had succeeded in **eliminating possible launch pads** for any offensive against the Aksai Chin highway by **eliminating DBO, Chushul and Demchok positions**.
- In October 1962, there was a company strength at the Galwan Post, while three other posts i.e. **Hot springs, Nala Junction and Patrol Base** had strengths of a platoon.
- The Hot Spring also served as the **Company headquarter**, and was shelled by the Chinese.

### Chang Chenmo River

- It is also known as **Changchenmo River**.
- It is a **tributary of the Shyok River** which is a part of the Indus River system.
- Its source is near the **Lanak Pass** in the Chinese-administered region of Kashmir.
- It is at the **southern edge of the disputed Aksai Chin region and north of the Pangong Lake basin**.
- Chang Chenmo means "**Great Northern**" in Tibetic languages.
- The Chang Chenmo Valley lies in a depression between the **Karakoram Range in**



the north and the **Changchenmo Range in the south.**

- In Chinese-administered Aksai Chin, the Changchenmo is joined by **Toglung Marpo, Kyapsang and Silung Kongma.**
- In Ladakh, it is joined by **Silung Burma, Silung Yogma, Kugrung River and Rimdi River.**

### **Kongka Pass**

- It is a **low mountain pass** over a hill that intrudes into the **Chang Chenmo Valley.**
- China considers **Kongka Pass as its boundary with India**, whereas **India regards Lanak Pass further east as the boundary.**

### **Lanak La**

- It is a **mountain pass** in the disputed **Aksai Chin region**, administered by China as part of the Tibet Autonomous Region.
- It is claimed by **India as its border pass.**

## **2.10 US keeps India in currency practices monitoring**

Recently, the United States has placed 11 countries, including **India, China, Japan, South Korea, Germany and Italy** in the **currency practices monitoring list.**

- The other countries named by the Department of Treasury in its quarterly report to Congress, are **Ireland, Malaysia, Singapore, Thailand and Mexico.**

### **What is currency practices monitoring list?**

- The US Department of Treasury has **established a monitoring list of major trading partners** that merit close attention to their currency practices and macroeconomic policies.
- An economy meeting **two of the three criteria in the 2015 Act** is placed on the Monitoring List.
- The Treasury will add and retain on the Monitoring List **any major US trading partner that accounts for a large and disproportionate share of the overall US trade deficit** even if that economy has not met two of the three criteria from the



2015 Act.

### What are the parameters used?

- An economy meeting two of the three criteria in the **Trade Facilitation and Trade Enforcement Act of 2015** is placed on the Monitoring List which includes:
  - **A significant bilateral trade surplus with the US**, one that is at least \$20 billion over a 12-month period;
  - **A material current account surplus equivalent to at least 2 percent of gross domestic product (GDP)** over a 12-month period; and
  - **“Persistent”, one-sided intervention when net purchases of foreign currency totalling at least 2 percent of the country’s GDP** over a 12 month period are conducted repeatedly, in at least six out of 12 months.

### What does the term ‘currency manipulator’ mean?

- It is a label given by the US government to countries it feels are engaging in **“unfair currency practices”** by deliberately devaluing their currency against the dollar.
- The practice would mean that the country in question is **artificially lowering the value of its currency to gain an unfair advantage** over others.

### 2.11 USCIRF recommends India for countries of particular concern tag

Recently, the **US Commission for International Religious Freedom (USCIRF)** has recommended **India** for ‘countries of particular concern’ tag.

- The USCIRF has asked the Biden Administration to **designate four nations, including India, as “countries of particular concern”**.
  - The other three countries are **Russia, Syria and Vietnam**.
- The USCIRF report has alleged that **religious freedom conditions in 2020** in these countries continued their negative trajectory.
- The report also recommended the State Department to **redesignate 10 nations as “countries of particular concern” (CPC)**.
  - These are **Burma (Myanmar), China, Eritrea, Iran, Nigeria, North**

### Korea, Pakistan, Saudi Arabia, Tajikistan and Turkmenistan.

#### USCIRF recommend 'countries of particular concern' tag for India

- **The passage of the religiously discriminatory Citizenship (Amendment) Act (CAA)** which is a fast track to citizenship for non-Muslim migrants from Afghanistan, Bangladesh, and Pakistan residing in India – led to nationwide protests.
- **The Indian Parliament amended the Foreign Contribution Regulation Act (FCRA)** to increase restrictions on non-governmental organisations (NGOs).
- **It stifled civil society and forcing religious organisations and human rights organisations**, including those advocating for religious freedom, to shut down.
- The USCIRF also alleged that in conjunction with a proposed **National Register of Citizens (NRC)** requiring all residents to provide documentation of citizenship, the CAA could subject Muslim.

#### USCIRF's 'countries of particular concern' tag meant for India

- India has been designated for **engaging in and tolerating systematic, ongoing, and egregious religious freedom violations**, as defined by the **International Religious Freedom Act (IRFA)**.
- India has in the past said that the American body on **international religious freedom** has chosen to be guided only by its biases on a matter on which it has no locus standi.
- USCIRF urges to **impose targeted sanctions on individuals and entities responsible for severe violations of religious freedom** by freezing those individuals' or entities' assets and barring their entry into the US.
- It urges the Congress to continue to **raise religious freedom concerns in the US-India bilateral relationship** and highlight concerns through hearings, briefings, letters, and congressional delegations.

#### Argument against USCIRF tag

- India must always **resist allowing political and inter-communal conflict** to be exacerbated by religious tensions.
- India's government and people have **everything to gain and absolutely nothing to**





lose from preserving social harmony and protecting the rights of everyone.

- India **should not be a ‘country of particular concern (CPC)’** because it is the world’s largest democracy, and it is governed by a pristine constitution.
- India has said that the **updation of the NRC in Assam is an “entirely internal” process** carried out at the direction and under the supervision of the Supreme Court.

### US Commission for International Religious Freedom (USCIRF)

- It is a **quasi-judicial body constituted by US-Congress.**
- It was **established by the US Government in 1998** after the inaction of the International Religious Freedom Act.
- The recommendations of USCIRF are **non-binding** to the State Department.
- It **monitors** international religious freedom.
- It is an **independent, bipartisan U.S. federal government commission created by the 1998 International Religious Freedom Act (IRFA).**

### 2.12 India-US Clean Energy Initiative

Recently, Prime Minister Shri Narendra Modi and US President Joe Biden launched the **India-US Clean Energy Agenda 2030 Partnership** at the Leaders’ Summit on Climate hosted by the US.

- India’s per capita **carbon footprint is 60 per cent lower than the global average** and it is because our lifestyle is still rooted in sustainable traditional practices.
- India has made an ambitious commitment of achieving the **renewable energy target of 450 gigawatt by 2030.**
- The **Nationally Defined Contributions (NDCs)** are each country’s goals towards achieving the Paris Agreement target of limiting rising temperatures to less than 2 degrees Celsius.
- The **US pledged to cut emissions by 50 to 52 per cent of its 2005 levels by 2030** which is double the 2015 goal set by former President Barack Obama.

### India-US Clean Energy Initiative

- It will help in **mobilising investments, demonstrate clean technologies, and enable green collaborations.**
- It will proceed along two main tracks i.e. **the Strategic Clean Energy Partnership** and **the Climate Action and Finance Mobilization Dialogue**, which will build on and subsume a range of existing processes.
- India and the United States aim to demonstrate how the **world can align swift climate action** with inclusive and resilient economic development.

### Leaders' Summit on Climate

- It is a two-day virtual conference **hosted by United States.**
- It will serve as an **opportunity to release their countries climate ambition** and how they will take action to reduce emissions.
- The **main objectives** of this summit are:
  - Get the **world's major economies to reduce emission** in this decade while also getting the public and private sector involvement.
  - Show how **climate action can have economic and social benefits** and build new businesses and industries.
  - Using the technology available to **adapt to climate change but also reduce emissions.**
  - Use **nature-based solutions** to achieve net-zero emissions by 2050.
  - **Protect lives and livelihoods** by finding ways to adapt to climate change.
- The **world's top five** highest emitters are **China, The United States, India, Russia and Japan.**
- Biden has announced that the **US will double its public climate financing development to developing countries** and triple public financing for climate application in developing countries by 2024.
- The Chinese President has promoted its **“green Belt and Road Initiative”** and announced efforts to **“strictly control coal-fired power generation projects”** and phase down coal consumption.
  - China has pledged **net zero emissions by 2060.**



- The British Prime Minister has said that they were **first country to pass legislation for net zero** and announced a target of **78 per cent emission reductions by 2035**(compared to 1990 levels).
- The Japan Prime Minister has announced that Japan aims to **achieve carbon neutrality by 2050** and that it will **cut its emissions by 46% over 2013 levels by 2030**.

### 2.13 Project DANTAK

Recently, the **Border Roads Organisation (BRO)** has announced that the **Project DANTAK** has completed 60 years in Bhutan.

- It was established on **April 24, 1961**.
- It was constituted as a result of the visionary leadership of **His Majesty the Third King and then Prime Minister Jawahar Lal Nehru**.
- It was raised with its **Headquarters at Deothang**.
  - In 1997, the Project DANTAK **headquarters moved** to its present location at **Simtokha (Thimphu)** from Deothang.
- It was tasked to **construct the pioneering motorable roads in Bhutan** by identifying the utmost importance of connectivity in spurring the socio-economic development and growth of Bhutan.
- It completed the **road connecting Samdrup Jongkhar to Trashigang** in 1968 and also **Thimphu was connected to Phuentsholing**.
- The notable projects executed by DANTAK include the construction of **Paro Airport, Yonphula Airfield, Thimphu – Trashigang Highway, Telecommunication & Hydro Power Infrastructure, Sherubtse College, Kanglung and India House Estate**.
- The **medical and education facilities** established by DANTAK in far flung areas were often the first in those locations.
- The **food outlets along the road introduced the Bhutanese to Indian delicacies** and developed a sweet tooth in them.

### Importance of India-Bhutan relations



- India and Bhutan share a **unique and time tested bilateral relationship**, characterized by utmost trust, goodwill and mutual understanding.
- The Government of India has consistently **supported the socio-economic development** of Bhutan.
- The **hydro-power cooperation** between the two countries is an example of win-win cooperation.
  - The ongoing cooperation between India and Bhutan in the hydro-power sector is covered under the **2006 bilateral agreement for cooperation and its Protocol signed in 2009**.
- India has been extending **economic assistance to Bhutan's socio-economic development** since the early 1960s when Bhutan launched its Five Year Plans.
- **India is Bhutan's largest trading partner** as in 2018, the total bilateral trade between the two countries stood at Rs. 9227.7 crores.

#### Challenges in India-Bhutan relations

- The older Bhutanese generations looked to India with gratitude but the newer generation tends to **look more deeply and with more dissatisfaction** at the situation.
- The terms on which India is financing the hydropower projects are **unfavorable to Bhutan** and it is also getting electricity from Bhutan at **cheap rates**.
- India has continued to **pressure Bhutan to dominate the foreign relations** of the country to such an extent that Bhutan does not engage in diplomatic talks with China.
- The current Bhutanese government faces major challenges with respect to **rising unemployment and rising foreign debt to India**.

#### 2.14 Supply Chain Resilience Initiative launched by Australia-India-Japan

Recently, the Trade Ministers of **India, Japan and Australia** formally launched the **Supply Chain Resilience initiative** in a Trilateral Ministerial Meeting

#### Supply Chain Resilience

- It is an approach that helps a country to ensure that it has **diversified its supply risk across a clutch of supplying nations** instead of being dependent on just one or a few.
- It is aimed at **addressing the impact on economic activity due to disruption in supply chains** caused by unanticipated events i.e. natural calamities such as volcanic eruptions, tsunamis, earthquakes or even a pandemic; or manmade, such as an armed conflict in a region.

### Supply Chain Resilience Initiative

- It is **proposal of Japan as a trilateral approach to trade**, with India and Australia as the other two partners.
- It is a **direct response to the individual economies and companies** who are concerned about the Chinese political behavior and disruption to the supply chain.
- The **two-fold objectives** of the SCRI are:
  - **Attract foreign direct investment** to turn the Indo-Pacific into an ‘economic powerhouse’; and
  - **Build a mutually complementary relationship** between the partner countries.

### Japan proposed the Supply Chain Resilience Initiative

- Japan exported **\$135 billion worth of goods to China in 2019 while imported \$169 billion worth from China** but the COVID-19 pandemic has led China to shut down its market and disrupted the supply to Japan.
- According to Bloomberg report, the **Japan’s import from China fell by half in February 2020** when China was battling the peak of the virus impact.
- The **growing trade tension between US and China has caused alarm in Japanese trade circles** and if the world’s two largest economies do not resolve their differences; it could threaten globalisation as a whole and have a major impact on Japan.

### Japan chose India as a partner of Supply Chain Resilience Initiative

- Japan is the **fourth-largest investor in India with cumulative foreign direct investments** touching \$33.5 billion in the 2000-2020 period accounting for 7.2% of



inflows.

- The **imports from Japan into India have more than doubled over 12 years** to \$12.8 billion in FY19 and the exports from India to the world's third-largest economy stood at \$4.9 billion in 2019-20.
- India is home to **at least 1400 Japanese companies which are operating in India** which gives a clear picture of long-standing and deepening trade relations.
- India also appears to be an **attractive option for potential investors** both as a market and as a manufacturing base.
- **India and Japan have an Industrial Competitiveness Partnership (Indo-Japan)** in existence which co-operates with Japanese businesses to set up their trade in Indian markets.

### Impact of Supply Chain Resilience Initiative on India

- It is significant that Japan has taken the initiative to include India and Australia, and **potentially other Asian and Pacific Rim nations later, in a strategic dialogue.**
- The recent border stand-off between India and China has led **Japan to partner India through a dialogue on alternative supply chains** and this move will certainly antagonise China.
- India should **enhance its self-reliance or works with exporting nations** other than China which could help in building resilience into the economy's supply networks.
- India has been **dependent on China on various products** such as Active Pharmaceutical Ingredients for medicines such as paracetamol and an internal push to suddenly cut links with China would be impractical.
  - **China's share of imports into India** in 2018 (considering the top 20 items supplied by China) stood at 14.5%.

## INTERNATIONAL RELATIONS

### 3.1 Global Gender Gap Report 2021

Recently, the World Economic Forum has released the Global Gender Gap Report 2021.

- **Iceland** continued to top the index in 2021, followed by **Finland and Norway**,



while **Afghanistan was at the last position** of 156.

- The report highlighted that **South Asia incidentally is one of the worst performing regions**, followed only by the Middle East and northern Africa.
  - In South Asia, **Bangladesh was the top performer** on the gender gap index with a global ranking of 65, followed by **Nepal at 106, Sri Lanka at 116, and Bhutan at 130.**
  - Apart from **Afghanistan, Pakistan** was the only country **behind India** on the index with a global ranking of 153.
- The report states that many countries have fared worse in this year's rankings compared to last year's, on account of **economic performance.**
  - Globally, the **average distance completed to parity is at 68 per cent** which is a step back compared to 2020 (-0.6 percentage points).
- The report points out that it will now take **135.6 years to close the gender gap worldwide** on its current trajectory.
- The report estimates that it will take **South Asia 195.4 years to close the gender gap**, while **Western Europe will take 52.1 years.**
- The gender gap in **political empowerment** remains the largest with **women represents only 26.1 per cent** of some 35,500 parliament seats and just **22.6 per cent** of over 3,400 ministers worldwide.
  - The report found out that **Bangladesh is the only country where more women have held head-of-state positions** than men in the past 50 years.
  - The countries with the **largest gender gaps in economic participation** include **Iran, India, Pakistan, Syria, Yemen, Iraq, and Afghanistan.**
- The report states that **China and India together account for about 90 to 95 per cent of the estimated 1.2 to 1.5 million missing female births** annually worldwide due to gender-biased prenatal sex selective practices.

### India's performance in Global Gender Gap Report 2021

- India has **fallen 28 places** in the 2021 edition of the Global Gender Gap Report.
- India is now one of the **worst performers in South Asia**, trailing behind





neighbours Bangladesh, Nepal, Bhutan, Sri Lanka and Myanmar.

- India is ranked **140 among 156 countries** in Global Gender Gap Report 2021.
- India has **declined on the political empowerment index** by 13.5 percentage points.
  - India witnessed a **decrease in women's labour force participation rate**, which fell from 24.8 per cent to 22.3 per cent.
- India is ranked **51st in women's participation in politics**.
  - India witnessed a **decline in the number of women ministers** i.e. from 23.1 per cent in 2019 to 9.1 per cent in 2021.
- India has been ranked at **114 in the index of education attainment**.
- The two indices where **India has fared the worst** are “**Health and Survival**”, which includes the sex ratio, and **economic participation of women**.
- The **second-largest gender gap** among the four components of the index is for the **Economic Participation and Opportunity sub index**.
  - The report notes that the **economic participation gender gap has widened** in India by 3 percent this year.
  - The share of women in **professional and technical roles declined** further to 29.2 per cent.
  - The share of women in **senior and managerial positions also is at 14.6 per cent and only 8.9 per cent firms** in the country have top female managers.
  - The estimated earned income of women in India is **only one-fifth of men's**, which puts the country among the bottom 10 globally on this indicator.
- The report points to a **skewed sex ratio as a major factor** for the worst performance of India in the **Health and Survival index**.
  - India is ranked **155 in the Health and Survival Index**, the only country to have fared worse than India is China.

### Global Gender Gap Report

- It was **first published in 2006** by the **World Economic Forum (WEF)**.
- The Index benchmarks the **evolution of gender-based gaps** among four key



dimensions i.e. **economic participation and opportunity, educational attainment, health and survival, and political empowerment.**

- It examines the **drivers of gender gaps and outlines the policies and practices** needed for a gender-inclusive recovery.
- It **presents information and data** that were compiled and/or collected by the World Economic Forum.

### 3.2 World Happiness Report 2020

Recently, the **Sustainable Development Solutions Network** released the **World Happiness Report 2020**.

- **Finland** is the **happiest country** in the world followed by Denmark, Switzerland, Iceland, Norway, Netherlands, Sweden, New Zealand and Austria.
- **Luxembourg** entered for the **first time** in the **top 10** happiest countries.
- **India's ranking dropped** from 140 to 144, **well below** Nepal (92nd), Pakistan (66th), Bangladesh (107th) and Sri Lanka (130th).
- **India ranks last** among the **BRICS countries** with Brazil (32nd), Russia (73rd), China (94th) and South Africa (109th).
- **Zimbabwe, South Sudan, and Afghanistan** were the **least happy** countries.
- For the **first time it ranks cities** around the world by their subjective well-being and digs more deeply into how the social, urban and natural environments combine to affect our happiness.

#### World Happiness Report

- The **first report** was published in **2012** which is a landmark survey of the state of global happiness that ranks 156 countries by how happy their citizens perceive themselves to be.
- It is a publication of the **Sustainable Development Solutions Network (SDSN)**.

#### Sustainable Development Solutions Network (SDSN)

- It was **set up in 2012** under the auspices of the UN Secretary-General.
- It **mobilizes global scientific and technological expertise** to promote practical



solutions for sustainable development, including the implementation of the **Sustainable Development Goals (SDGs)** and the **Paris Climate Agreement**.

- It works closely with **United Nations agencies**, multilateral financing institutions, the private sector, and civil society.

### 3.3 Everyone's Invited Platform

Recently, some of the United Kingdom's most prestigious private schools have been contending with a recent **flurry of allegations of sexual harassment, abuse and assault** shared anonymously on a website called 'Everyone's Invited'.

#### What is Everyone's Invited Platform?

- It was **launched by 22-year-old activist** and college student **Soma Sara in 2020**.
- It aims to **eradicate 'rape culture'**, by providing survivors of sexual abuse with a forum where they can anonymously share their experiences of harassment, abuse, misogyny and assault.
- It provides **survivors with resources to deal with trauma**, as well as helpline numbers for them to report the incident.
- The website is **not strictly to expose sexual violence** in academic settings.
  - It became the **platform of choice for thousands of pupils** when it invited users to post anonymous testimonies.

#### Vision of Everyone's Invited Platform

- Striving for a world where **sexual violence cannot exist** and victim blaming is not tolerated;
- **Ending the stigma and shame** that surrounds sexual violence;
- **Survivors should feel able to come forward with their stories** without judgement knowing that they're supported and heard;
- Inclusivity is at the forefront of this movement, we are committed to **amplifying the voices of all survivors**;
- Advocates for **constant reflection, striving towards a world** where we recognise our shortcomings and commit to positive change; and

- **Safeguarding the rights and wellbeing** of young people across the globe

### What is a Rape Culture?

- It is a concept that refers to an environment where **rape and sexual violence against women is normalised** due to pre-existing societal attitudes and beliefs about gender and sexuality.
- It is often justified further by **warped depictions of sexual assault and male-female relations** in the media and popular culture.
- The platform states the **rape culture exists when thoughts, behaviours, & attitudes in a society or environment** have the effect of normalising and trivialising sexual violence.
- The behaviours such as **misogyny, slut shaming, victim blaming, and sexual harassment create an environment** where sexual violence and abuse can exist and thrive.

### 3.4 What's in the China-Iran Strategic Cooperation Agreement?



China and Iran have signed a **25-year “strategic cooperation pact”** which includes “political economic and strategic components”.

- The agreement comes amid a major push from China to back Iran to deal with the continuing weight of sanctions reinstated by the US after its withdrawal from the Iranian nuclear deal.
  - It will deepen relations between Iran and China and would establish a blueprint for “reciprocal investments in the fields of transport, ports, energy, industry and services.”
  - It forms a part of China’s trillion-dollar Belt and Road Initiative (BRI), a plan to fund infrastructure projects and increase its influence overseas.
- **China’s Growing Role in the Middle East:**
  - Iran relies on China as its largest trading partner.
  - Chinese foreign minister, in his recent visit to West Asian nations, proposed a **five-point initiative** for achieving security and stability in the Middle East, advocating “mutual respect, upholding equity and justice, achieving non-proliferation, jointly fostering collective security, and accelerating development cooperation.”
  - Earlier, China and Russia called for the US to unconditionally return to the **Joint Comprehensive Plan of Action (JCPOA)** as soon as possible and revoke the unilateral sanctions against Iran.
    - In this context, they proposed “the establishment of a regional security dialogue platform to converge a new consensus on resolving the security concerns of countries in the region.”
- **India’s Concerns:**
  - **Military Partnership:** China is also concluding a security and military partnership with Iran.
    - China calls for “joint training and exercises, joint research and weapons development and intelligence sharing” to fight “the lopsided battle with terrorism, drug and human trafficking and cross-border crimes”.
    - The sizable Chinese investments in Iranian ports



development may eventually be turned into permanent military access arrangements with Iran.

- **Strategic Stakes Around the Chabahar Port:** With a growing Chinese presence in Iran, India is concerned about its strategic stakes around the **Chabahar port** project that it has been developing.
  - The port is close to Gwadar port in Pakistan, which is being developed by China as part of its China-Pakistan Economic Corridor that links it to the Indian Ocean through BRI.
- **Geopolitical Rivalry:** India finds itself caught in the geopolitical rivalry between the US & China over Iran.
  - India's dilemma also stems from the fact that robust support from the US is essential when it is locked in a border stand-off with China.
- **Impact on Relationship with Other Countries:** Growing Chinese footsteps in Iran will have a long-lasting impact on India's relationship with not only Iran but also on Afghanistan and Central Asian nations.

### Joint Comprehensive Plan of Action

- In 2015, Iran with the P5+1 group of world powers – the USA, UK, France, China, Russia, and Germany agreed on a long-term deal on its nuclear programme.
  - The deal was named as **Joint Comprehensive Plan of Action (JCPOA)** and in common parlance as **Iran Nuclear Deal**.
- Under the deal, Iran agreed to curb its nuclear activity in return for the lifting of sanctions and access to global trade.
- The agreement allowed Iran to accumulate small amounts of uranium for research but it banned the **enrichment of uranium**, which is used to make reactor fuel and nuclear weapons.
- Iran was also required to redesign a heavy-water reactor being built, whose spent fuel could contain plutonium suitable for a bomb and to allow international inspections.
- In 2018, the **United States declared its withdrawal from JCPOA** and imposed unilateral sanction on Iran.





- Iran has pulled away from restrictions imposed under the deal in order to put pressure on the other signatories — Germany, France, Britain, Russia and China — to provide new economic incentives to offset US sanctions.

### 3.5 Saudi Arabia has raised oil shipping costs to Asia

Recently, the Saudi Arabia's national oil company Saud Aramco has **raised the price of oil shipments to Asia** by between 20-50 cents per barrel.

#### Key Highlights

- Saudi Aramco has **not raised the shipping prices for northwestern European customers** and has even **cut shipping prices for US customers**.
- The move comes on the heels of a **decision by the OPEC+ group of oil-producing countries to raise crude oil production** by about 2 million barrels

#### What has led Saudi Arabia to raise shipping prices for Asia?

- The experts noted that the hike may be a signal to India, which has been looking to **diversify supplies away from Saudi Arabia**.
- India's state-owned oil marketing companies are **set to cut imports from Saudi Arabia in May in response to Saudi Arabia maintaining production cuts** aimed at keeping oil prices elevated through April.
- The experts noted that the **hike in shipping prices coupled with the relaxation in production cuts** could help save face for Saudi Arabia and India after public disagreements between the two countries on crude oil production levels.

#### Why OMCs are planning to cut imports from Saudi Arabia?

- OPEC+, a group of 23 major oil-producing countries, had **cut crude oil production levels** during the peak of the Covid-19 pandemic as the price of Brent crude fell to below \$20 per barrel.
- OPEC+ had decided to **maintain lower production levels** through April despite crude oil prices recovering to pre-pandemic levels.
- A consistent rise in crude oil prices has contributed to **auto fuel prices reaching record highs in India** as it imports over 80 per cent of its crude oil requirements.





- Saudi Arabia alone had **extended a 1 million barrel per day production cut** through April, contributing to elevated crude oil prices.

### Impact of rising crude prices on India

- A consistent rise in crude oil prices has led to the **prices of petrol and diesel reaching a record high level across India**, with the price of petrol crossing Rs 100 per litre in some parts of the country.
- The **prices of both petrol and diesel have risen by about Rs 7 per litre** since the beginning of the year despite oil marketing companies partially absorbing the impact of higher crude oil prices.
- The rising crude oil prices have also **magnified the impact of central and state taxes on auto fuels** which were hiked significantly in 2020 to boost revenues amid lower economic activity.
- The **increase in price of oil shipments to Asia** has raised the total cost of Arab light crude for key Asian importers such as India to \$1.8 over the benchmark price.

### Importance of Saudi Arabia as a source of crude oil for India

- Saudi Arabia has consistently been the **second-largest source of crude oil for India** after Iraq was displaced by the United States in February.
- According to data collated by the Directorate General of Commercial Intelligence and Statistics, India has **imported 2.88 million tonnes of crude oil from Saudi Arabia** in January.
- A reduction in crude oil imports from Saudi Arabia would likely **lead to increased imports from other gulf countries** and the United States.
- Saudi Arabia will continue to be one of the **largest sources for the import of crude oil for India** due to its geographical proximity and India's large crude oil requirements.

### 3.6 Fall in Crude Oil Prices

Recently, the **price of Brent crude has fallen** under \$63 per barrel from a high of \$70 per barrel in early March.



### Reasons for fall in crude oil prices

- It is due to **growing fears about a fall in demand due to new travel restrictions** to combat a resurgence in Covid-19 infections and increasing crude oil supply.
- The Covid-19 infections are coupled with a decision by **OPEC+ to increase crude oil production** has contributed to a fall in crude oil prices.
  - The OPEC+ has announced a **phased withdrawal of production cuts** which would see total crude oil production by the group of countries rise by 1.1 million barrels per day.
- The US data has also indicated that **gasoline inventories are rising faster** than the fall in crude oil inventories raising concerns of waning demand for petroleum products.
- **US crude oil production capacity has recovered** to about 11 million barrels per day after abnormally cold weather forced US crude oil output down to 9.7 million barrels per day.
- The **recovery in supply without a similar recovery in demand** has contributed to the recent correction in crude oil prices and that supply cuts were difficult to maintain for oil-producing countries.

### Why Crude Oil Prices rose sharply?

- The Hopes of **increasing demand due to lower restrictions and accelerated vaccine administration programs** around the world had pushed crude oil prices up from about \$40 in October to \$70 in early March.
- The **key oil-producing countries also maintained production cuts** imposed early in FY21 to keep crude oil prices elevated with Saudi Arabia even cutting crude oil production.
- **A fall in US crude oil production** also contributed to keeping global prices elevated.

### Impact of fall in crude oil prices

- India had called on **oil-producing countries to withdraw production cuts** stating that high crude oil prices were slowing the economic recovery in developing



economies.

- The **fall in international crude prices has reversed a six-month trend of rising auto fuel prices** which saw the prices of petrol and diesel hit all-time highs across the country.
- The OMCs have **lowered the price of petrol and diesel by about 60 paise per litre** when the OMCs cut prices after a 24-day halt in daily price revisions as elections were looming in a number of states.

### How does fall in oil prices affects India?

- **Current Account Balance:** A fall in price would drive down the value of its imports which helps narrow India's current account deficit.
- **Inflation:** A rise in oil price leads to an increase in prices of all goods and services which also affects us all directly as petrol and diesel prices rise.
- **Oil subsidy and fiscal deficit:** A fall in oil prices reduces companies' losses, oil subsidies and thus helps narrow fiscal deficit.

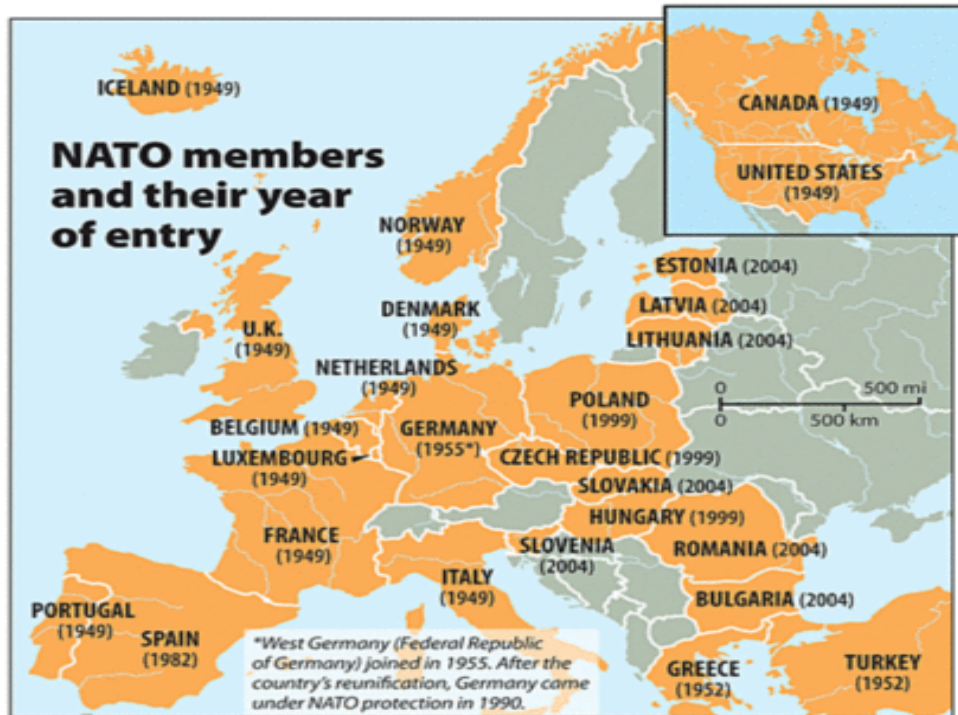


- The government fixes the price of fuel at a subsidised rate which then compensates companies for any loss from selling fuel products at lower rates.
- It adds to the government's total expenditure and leads to a rise in fiscal deficit.
- **Rupee exchange rate:** The value of a free currency like Rupee depends on its demand in the currency market.
  - A high deficit means the country has to sell rupees and buy dollars to pay its bills.
  - A fall in oil prices is good for the rupee.

### 3.7 Ukraine pressures Nato to speed path to membership

Ukrainian President urged the **North Atlantic Treaty Organization (NATO)** to speed up his country's membership in the alliance.

Ukraine hopes to be invited this year to join a **NATO Membership Action Plan (MAP)**.



- **Reasons for Ukraine to Join NATO:**

- Ukraine is of the opinion that **joining NATO is the only way to end fighting with pro-Russia separatists.**
- There is an increase in clashes and Russian military movements on the border raise fears of an escalation of these **separatist conflict in eastern Ukraine.**
- Ukraine accuses Russia of massing thousands of military personnel on its northern and eastern borders as well as on the **Crimean peninsula** (annexed by Russia in 2014).
- Ukraine's Western allies have rushed to its defence, with a series of statements warning Russia against taking further action.

- **India did not join the Western powers' condemnation of Russia's intervention in Crimea and kept a low profile on the issue.**

- **About North Atlantic Treaty Organization (NATO):**

- It is a **military alliance established by the North Atlantic Treaty** (also called the **Washington Treaty**) of 4th April, 1949, by the United States,



Canada, and several Western European nations to provide collective security against the Soviet Union.

- It is headquartered at **Brussels, Belgium**.
- A key provision of the treaty, the so-called **Article 5**, states that if one member of the alliance is attacked in Europe or North America, it is to be considered an attack on all members. That effectively put Western Europe under the “nuclear umbrella” of the US.

- **NATO has only once invoked Article 5**, on 12<sup>th</sup> September, 2001, following the 9/11 attacks on the World Trade Center in the US.

- NATO’s protection **does not extend to members’ civil wars or internal coups**.

Ra • As of 30th March 2021, there are 30 member states, with the Republic of North Macedonia becoming the latest member to join the alliance in 2020.

### Membership Action Plan

- It is a NATO programme of advice, assistance and practical support tailored to the individual needs of countries wishing to join the Alliance.
- Participation in the MAP does not prejudice any decision by the Alliance on future membership.
- **Bosnia and Herzegovina** is currently participating in MAP.

### 3.8 Iran ship in Red Sea blast, suspicion falls on Israel

An **Iranian freighter was hit by Israel in the Red Sea** in retaliation for past Iranian strikes on its vessels. The blast struck the **Iranian commercial vessel MV Saviz** off the coast of Djibouti.

The attack came as Iranian officials gathered in Vienna to **negotiate the restoration of a 2015 deal Joint Comprehensive Plan of Action (JCPOA)** that was designed to curb **Iran’s nuclear activities**.



- **Red Sea:**

- **Location:**

- The Red Sea is a **semi-enclosed tropical basin**, bounded by northeastern Africa, to the west, and the **Arabian peninsula**, to the east.

- The **elongated and narrow-shaped basin** extends between the **Mediterranean Sea**, to the north-west, and the Indian Ocean, to the south-east.

- At the northern end, it separates into the **Gulf of Aqaba and the Gulf of Suez**, which is connected to the Mediterranean Sea via the **Suez Canal**.

- At the southern end, it is connected to the **Gulf of Aden**, and the outer Indian Ocean, via the Strait of **Bab-el-Mandeb**.

- It is surrounded by **desert or semi-desert areas**, with no major freshwater inflow.

- **Formation:**

- The Red sea acquired its present shape over the **past 4 to 5 million years**, by slow **seafloor spreading**, a fact that makes it a geologically recent opening and one of the **youngest oceanic zones on Earth**.

- Today, the basin continues to widen at a rate of 1-2 cm per year

- **Biodiversity:**



- The unique habitats of the Red sea support a wide range of marine life, including **sea turtles, dugongs, dolphins** and many endemic fish species.
- **Coral reefs** mainly extend along the northern and central coasts, and decrease in abundance towards the southern region, as coastal waters become more turbid.
- **The Reason why it is called Red Sea:**
  - There are various theories as to how the name came about, with the most popular being a reference to the **seasonal blooms of Trichodesmium erythraeum (a red-colored algae)** near the water's surface.
  - Other scholars believe it is linked to the way Asiatic languages often use colors to refer to cardinal directions, with **“red” referring to “south” just as the Black Sea may be referring to the north.**

### Joint Comprehensive Plan of Action

- In 2015, **Iran with the P5+1 group of world powers – the US, UK, France, China, Russia, and Germany** agreed on a long-term deal on its nuclear programme.
- The deal was named as **Joint Comprehensive Plan of Action (JCPOA)** and in common parlance as Iran Nuclear Deal.
- The deal came after years of tension over Iran's alleged efforts to develop nuclear weapons.
- Iran insisted that its nuclear programme was entirely peaceful, but the international community did not believe that.
- Under the JCPOA, **Iran agreed to limit its nuclear activities** by stopping uranium enrichment and allowing the international agencies to inspect its nuclear facilities in return for the lifting of economic sanctions.
- However, in May 2018, the USA pulled out of the JCPOA and threatened to impose sanctions on Iran and on nations doing a significant amount of trade with Iran.





### 3.9 Reversing Trump, Biden Restores Aid to Palestinians

The United States, in a significant reversal to the earlier policy, has announced the restoration of at least USD 235 million in **financial assistance to the Palestinians**.

- The US administration had **already announced USD 15 million in coronavirus relief to the Palestinians**.
- **Financial Aid:**
  - The financial aid includes USD 75 million economic help for the **West Bank & Gaza**, USD 10 million for **'peacebuilding' programmes** of the **US Agency for International Development (USAID)** and USD 150 million in humanitarian assistance to the **UN Relief and Works Agency (UNRWA)**.

Raja S • The UNRWA funds would include educational assistance for at least 5,00,000 Palestinian children living in West Asia.

◀ • The **Trump administration (former administration) had almost ended all funding** to the organisation in 2018.

◀ • The **UN welcomed the move**, hoping it would attract more funds to the body. There were a number of countries that had greatly reduced or halted contributions to UNRWA after the US stopped the aid.

— • The **Prime Minister of Palestine welcomed the move** and called it a new political path that meets the rights and aspirations of the Palestinian people based on international law and UN resolutions.

• However, **Israel**, which has **accused UNRWA of anti-Semitism** (hostility to, prejudice, or discrimination against Jews), **objected to the funding plans**.

- **Israel – Palestine Issues:**

- The decades-long conflict between Israelis and Palestinians is rooted in **competing claims to the Holy Land**, and includes **disputes over borders, Jerusalem, security, and Palestinian refugees**.

- The **Israel-Palestine Conflict** can be traced back to 1917.

- Holy Land is a Middle Eastern region with great religious and

historical significance to Christians, Jews, and Muslims.

- **Mideast War, 1967** was a major turning point. It is also known as the **six-day war or Third Arab-Israeli war**.

- Israel captured the West Bank, east Jerusalem and Gaza Strip in the war. In the decades since, Israel has built settlements in the West Bank and east Jerusalem that now house a million Israelis.

- **US Recent Policy:**

- US President Donald Trump's decision in 2017, to **relocate the US Embassy to Jerusalem**, was criticized for being heavily tilted towards Israel.
- **Mideast Plan or Middle East Peace Plan:** It was unveiled by the then US government in January, 2020.

Raja S



- Under it, the Palestinians would have a limited statehood contingent on a list of stringent requirements while **Israel would annex some 30% of the West Bank**.

- The Palestinians rejected the plan and threatened to withdraw from key provisions of the **Oslo Peace Accords**, which are a series of agreements between Israel and the Palestinians signed in the 1990s.

- Present US President Joe Biden has reaffirmed the United States' commitment to a **two-state solution**.

- **India's Stand:**

- India **recognised Israel in 1950** but it is also the **first non-Arab country to recognise Palestine Liberation Organisation (PLO)** as the sole representative of the Palestinian.

- India is also one of the first countries to recognise the **statehood of Palestine in 1988**.

- In 2014, India favored **UNHRC's** resolution to probe Israel's human rights violations in Gaza. Despite supporting the probe, India abstained from voting against Israel in UNHRC in 2015.

- As a part of **Link West Policy**, India has **de-hyphenated its relationship** with Israel and Palestine in 2018 to **treat both the countries**



### mutually independent and exclusive.

- In June 2019, India voted in favor of a decision introduced by Israel in the **UN Economic and Social Council (ECOSOC)** that objected to granting consultative status to a Palestinian non-governmental organization.
- So far India has **tried to maintain the image of its historical moral supporter for Palestinian self-determination**, and at the same time to engage in the military, economic, and other strategic relations with Israel.

### The Territorial Puzzle

- **West Bank:** The West Bank is **sandwiched between Israel and Jordan**. One of its major cities is Ramallah, the de facto administrative capital of Palestine.
  - Israel took control of it in the 1967 war and has over the years established settlements there.
- **Gaza:** The Gaza Strip located **between Israel and Egypt**. Israel occupied the strip after 1967, but relinquished control of Gaza City and day-to-day administration in most of the territory during the **Oslo peace process**.
  - In 2005, Israel unilaterally removed Jewish settlements from the territory, though it continues to control international access to it.
- **Golan Heights:** The Golan Heights is a **strategic plateau that Israel captured from Syria** in the 1967 war. Israel effectively annexed the territory in 1981.
  - The US has officially recognized Jerusalem and Golan Heights as part of Israel.
- **Fatah:** Founded by the late Yasir Arafat in the 1950s, Fatah is the largest Palestinian political faction.
  - Unlike Hamas, Fatah is a secular movement, has nominally recognized Israel, and has actively participated in the peace process.
- **Hamas:** Hamas is regarded as a terrorist organization by the US government. In 2006, Hamas won the Palestinian Authority's legislative elections.
  - It ejected Fatah from Gaza in 2007, splitting the Palestinian movement geographically, as well.
- **Balanced Approach Towards the Israel-Palestine:** The world at large needs to



come together for a **peaceful solution** but the reluctance of the Israeli government and other involved parties have aggravated the issue more.

- Thus a balanced approach would help to maintain favorable relations with Arab countries as well as Israel.
- **Abraham Accords, a Positive Step:** The recent normalization agreements between **Israel and the UAE, Bahrain, Sudan, and Morocco**, known as the **Abraham Accords**, are the steps in the right direction.
  - All regional powers should envisage peace between the two countries on line of Abraham Accords.

### 3.10 Iran Nuclear Talk

Recently, the signatories of the **2015 Iran nuclear deal** has announced that they will come together in Vienna with what would appear to be a simple task.

- Both Iran and the United States insist that they want to return to the deal, known as the **Joint Comprehensive Plan of Action, or JCPOA**.
- The signatories want to **restore compliance with an agreement** that put strict controls on Iran's nuclear enrichment.
  - The talks aim to **ensure that it cannot build a nuclear weapon**, in return for the lifting of punishing economic sanctions.
- In 2018, the then US President pulled out of the accord by calling it "**the worst deal ever negotiated**".
- Iran responded in part by **enriching uranium significantly beyond the limits** in the agreement, building more advanced centrifuges, and acting more aggressively in support of allies.

#### Iran Nuclear Talks

- The Vienna talks are **intended to create a road map for a synchronized return** of both Iran and the United States to compliance with the 2015 deal.
- The accord was the **outcome of years of negotiations** with Iran.
- Under the chairmanship of the European Union, **Britain, France and Germany made the first overtures to Iran**, joined by the other permanent members of the



United Nations Security Council: **Russia, China and the United States.**

### Obstacles in Iran Nuclear Talks

- The **Iranian regime was established by a revolution** more than four decades ago that **replaced the U.S.-backed Shah of Iran** with a complicated government overseen by clerics.
- The then US President **imposed many economic sanctions on Iran beyond those originally lifted** by the deal and tried “maximum pressure” to force Iran to negotiate much more stringent terms.
- The deal was **widely criticized as too weak by many in Congress and by Israel**, which saw Iran’s possible reach for a nuclear weapon.
- The Europeans tried to keep the deal alive, but proved **unable to provide Iran the economic benefits** it was due after Trump restored U.S. sanctions that had been lifted under the deal’s terms.

### Structure of Iran Nuclear Talks

- The meeting of senior diplomats is formally a session of the **Joint Commission of the deal**, called by the **European Union as chairman**.
- The diplomats from **Britain, France, Germany, Russia, China and Iran** will meet, with an EU chair, and start to discuss how to revitalize the accord.
- The Europeans suggest that they will **either meet the Americans with proposals**, or that the Iranians will leave the room before the Americans enter because Iran refuses to meet face-to-face with American diplomats.

### 3.11 3,000-Year-Old ‘Lost Golden City’ Found in Egypt

Recently, **Egypt has announced the discovery** of what is being touted as the most important find since the unearthing of **King Tutankhamun’s tomb almost 100 years ago**.

#### Lost Golden City of Egypt

- It is a **three-millennia-old city** from the era of **18th-dynasty king Amenhotep III**, who ruled ancient Egypt from 1391 to 1353 B.C.
- It was found in the **southern province of Luxor**, near some of the country’s best-known monuments.

- It is called as **ancient Egyptian Pompeii** because the mud-brick houses, artefacts, and tools discovered from the reign of the Pharaohs.
- The city was once the **largest administrative and industrial settlement** of the Pharaonic Empire and many foreign missions who were looking for the settlement had not been able to find it.



### Discovery from Archeologists

- The newly discovered city is located on the **west bank of the Nile river**, close to the **Colossi of Memnon, Medinet Habu** and the **Ramesseum**.
- The archaeologists had been excavating in this area to look for a **mortuary temple of King Tutankhamun**.
- The legend of Tutankhamun, whose tomb was discovered in the **Valley of the Kings in 1922** by British archaeologists Howard Carter and Lord Carnarvon, is famous on account of the vast treasure discovered at the location.

### Significance of new findings on lost golden city

- The archaeologists are said to have **found city walls and even rooms filled** with utensils used in daily life.
- They have found **clay caps of wine vessels, rings, scarabs, coloured pottery, and**





**spinning and weaving tools.**

- The mud bricks discovered bear the **seal of Tutankhamun's grandfather King Amenhotep III**, who is considered to be one of Egypt's most powerful pharaohs.
- The city is also believed to have been used by Tutankhamun and his successor Ay during a period widely believed to be the **golden era of ancient Egypt**.
- The site contains a **large number of ovens and kilns for making glass and faience**, along with the debris of thousands of statues.

### 3.12 Japan to release contaminated Fukushima water into the ocean

Recently, Japan has said that it is planning to release into the sea more than a million tonnes of **radioactive water from the destroyed Fukushima nuclear station**.

- The Plant operator **Tokyo Electric Power Company Holdings Inc. (Tepco)** will begin pumping out water in about two years after treatment in a process that will take decades to complete.

#### Issue with contaminated Fukushima water

- Tepco has been **struggling with the build-up of contaminated water** since bringing three reactors under control after a 2011 earthquake and tsunami knocked out electricity and cooling.
- The company has been using a **makeshift system of pumps and piping to inject water into damaged reactor vessels** to keep melted uranium fuel rods cool.
- The **water is contaminated as it comes in contact with the fuel** before leaking into damaged basements and tunnels, where it mixes with groundwater that flows through the site from hills above.
- The combination results in **excess contaminated water that is pumped out** and treated before being stored in huge tanks crowding the site.

#### Why release of contaminated water in ocean?

- Tepco plans to **filter the contaminated water again to remove isotopes**, leaving only **tritium**, a **radioactive isotope of hydrogen** hard to separate from water.
- Tepco will then **dilute the water until tritium levels fall below regulatory limits**,





before pumping it directly into the ocean from the coastal site.

- **Water containing tritium is routinely released from nuclear plants** around the world and releasing the Fukushima water to the ocean is supported by regulatory authorities.
- Tritium is considered to be **relatively harmless** because it does not emit enough energy to penetrate human skin.

### Concerns associated with ocean release of contaminated water

- Tepco is engaging with fishing communities and is **promoting agriculture, fishery and forest products in stores and restaurants to reduce any reputational harm** to produce from the area.
- The environmental groups, including Greenpeace, say that government should **build more tanks to hold the water outside the plant** instead of choosing the cheaper option of ocean release.
- The fishing unions in Fukushima urged the government for years not to release the water, arguing it would **undo work to restore the damaged reputation of their fisheries**.
- The **neighbouring countries have expressed serious concerns** that the decision could bring a direct and indirect impact on the safety of our people and surrounding environment.
- The municipal councils in Busan and Ulsan, South Korean cities close to the sea, have called for the **release plan to be scrapped**.

### Fukushima Nuclear Station

- The Fukushima Daiichi Nuclear Power Plant is in the town of **Okuma, in Fukushima Prefecture**.
- It sits on the **country's east coast**, about 220km north-east of the capital Tokyo.
- It was the **first nuclear plant to be constructed and operated** entirely by Tokyo Electric Power Company (TEPCO).
- All the reactors at the Fukushima Nuclear Station were **Boiling Water Reactors (BWR)**.
  - In total, the station has **six boiling water reactors** which together have



a power generation capacity of 4.69GW.

- **All the reactors except Unit 3** continued using **low enriched uranium (LEU)** while Unit 3 was being fed with mixed-oxide (MOX) fuel since September 2010.

### Boiling Water Reactor

- They have a **closed water-steam cycle**.
- In the cooling water system, the **coolant water flows through the reactor core**, where the heat in the fuel elements, produced through nuclear fission, heats the water so that it boils in the reactor pressure vessel.
- There is relatively **low pressure in the reactor pressure vessel**.
- **Boiling and evaporation of the coolant water in the reactor pressure vessel** is the main feature distinguishing the BWR from a pressurised water reactor (PWR).

### 3.13 Raisina Dialogue 2021

Recently, the Prime Minister Shri Narendra Modi has addressed the inaugural session of the **Raisina Dialogue 2021**.

#### Raisina Dialogue

- It is **India's annual premier conference on geopolitics and geo-economics** committed to addressing the most challenging issues facing the global community.
- It is structured as a **multi-stakeholder, cross sectoral discussion, involving heads of state, cabinet ministers and local government officials**.
- It is hosted by the **Observer Research Foundation** in partnership with the **Ministry of External Affairs, Government of India**.
- The theme of Raisina Dialogue 2021 is **'#Viral World: Outbreaks, Outliers, and Out of Control'**.

#### Key Highlights of Raisina Dialogue 2021

- The event will be seeing the presence of **Former PM of Sweden, Former Prime**



### **Minister of Australia, and Former Prime Minister of New Zealand.**

- The 6th edition of the dialogue will have **50 sessions with the participation of 150 speakers from 50 different countries** as well as multilateral organisations.
- The Foreign Ministers of **Slovenia, Portugal, Singapore, Romania, Nigeria, Italy, Sweden, Japan, Kenya, Australia, Chile, Iran, Maldives, Bhutan, and Qatar** will also be participating in the event.

### **Importance of Raisina Dialogue**

- It is India's contribution to the global efforts for **discovering solutions, providing stability, and identifying opportunities** to a century.
- It has attracted leading minds from the **global strategic and policy-making community for discussing broader foreign policy** as well as strategic issues facing the world.
- It **invites leaders from politics, business, media and the civil society** to hold discussions on the state of the world and explore opportunities for cooperation on several contemporary matters.

### **3.14 Valley of the Fallen**

Recently, the Spanish government has kick started the process to open up a mass grave at the '**Valley of the Fallen**', where over 30,000 victims of the Spanish Civil War lay buried.

- The Spain's socialist government has asked for **permits to start exhuming the bodies from the vast mausoleum** on the outskirts of Madrid.
- It was **originally built by former Spanish dictator Francisco Franco**, and has since become a sort of shrine for the far-right in the country.
- The government spokeswoman had said that Spanish authorities have **received more than 60 exhumation requests** from relatives of the victims of the civil war, who are buried at the site.

### **What is Valley of the Fallen?**

- The **Valle de los Caídos or Valley of the Fallen** is built on the slopes of a mountain range on the **outskirts of Madrid**.



- It was **constructed by former dictator Francisco Franco** following the Spanish Civil war (1936-1939) as a burial monument and memorial Church.
- The valley was **built in part by political prisoners** of Franco's regime over a period of 18 years.

### **Project on exhuming bodies of victims of the Civil War**

- Its goal is for the **Valley to be seen as a place of commemoration, remembrance and homage** to the victims of the war.
- The government vowed to foot the **bill for the exhumation of all the victims of the civil war and Franco's regime.**
- The aim of the project is to **transform the valley into a civil cemetery for the remains of people killed on both sides** during the civil war.
- The ambitious project will **involve a fair deal of construction work** that will permit workers to safely access and remove the remains.

### **3.15 Pterosaur Species**

Recently, the **new pterosaur fossil** was discovered in the Tiaojishan Formation of Liaoning, China and is thought to be 160 million years old.

- It has now been described by an international team of researchers from China, Brazil, UK, Denmark and Japan, and has been also dubbed as "**Monkeydactyl**".

### **Pterosaur Species**

- The **pterosaur species were reptiles, close cousins of dinosaurs** and the first animals after insects to **evolve powered flight.**
- The Monkeydactyl has been named as **Kunpengopterus antipollicatus.**
- "**Antipollicatus**" in ancient Greek means "**opposite thumbs**".
- The Paleontologists had identified that species as a **pterosaur that lived over 77 million years ago** in today's Western Canada.
  - It was named **Cryodrakon boreas** and believed to be one of the largest flying animals.

### Key Findings from Researchers

- The pterosaur species Researchers have **described a pterosaur species with opposable thumbs**, which could likely be the earliest-known instance of the limb.
- The term '**antipollicatus**' was attached to the name because the researchers' findings could be the **first discovery of a pterosaur with an opposed thumb**.
- The research team **scanned the fossil of K. antipollicatus** using micro-computed tomography (micro-CT).
  - It is a technique making **use of X-ray to image an object**.

### Significance of opposability of the thumb

- The opposability of the thumb is defined as being able to "**simultaneously flex, abduct and medially rotate the thumb**" in a way that one is able to bring the tip of the thumb to touch the tips of the other fingers.
- Along with **humans**, some ancient **monkeys and apes** also had **opposable thumbs**.
- Humans have a **relatively longer and distally placed thumb**, and larger thumb muscles.
  - It implies that **humans' tip-to-tip precision grip** when holding smaller objects is **superior to non-human primates**.

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### 3.16 UN Food Systems Summit 2021

Recently, the United Nations Secretary General has called for the **first ever UN Food Systems Summit** to be held in September 2021.

#### Need for UN Food Systems Summit

- The world needs the **game changing ideas from the experiences** through the National, Sub-national (State) and independent consultation for the **five Action Tracks** related to:
  - Safe and nutritious food;
  - Sustainable consumption patterns;
  - Nature-positive production;



- Advance equitable livelihoods; and
- Resilience to vulnerabilities, shocks and stress
- The COVID-19 pandemic led **vulnerability and challenges faced by the humanity in food** and related system has further added to the need for reorienting our actions and strategies.

### UN Food Systems Summit

- It will be convened as part of the **Decade of Action to achieve the Sustainable Development Goals (SDGs)** by 2030.
- The Summit will **launch bold new actions to deliver progress on all 17 SDGs**, each of which relies to some degree on healthier, more sustainable and equitable food systems.
- It will **bring together key players from the worlds** of science, business, policy, healthcare and academia, as well as farmers, indigenous people, youth organizations, environmental activists, and other key stakeholders.

### India at UN Food Systems Summit

- India has **volunteered, but not limited to**, to the **Action Track 4: Advance Equitable Livelihoods** for the UN Food System Summit 2021.
- The Government of India has constituted a high level **Interdepartmental Group** under the Chairmanship of Prof. Ramesh Chand in order to work towards five Action Tracks of UN.
- The group's primary objective is to **conduct National Dialogues with all the stakeholders of agri-food systems** for exploring national pathways towards creating sustainable and equitable food systems in India.
- The State Governments have also been requested to **conduct the state-level dialogues with all the stakeholders** involved directly or indirectly in the agri-food systems in India.

### Objectives of UN Food Systems Summit

- **Generate significant action and measurable progress** towards the 2030 Agenda for Sustainable Development.
- **Raise awareness and elevate public discussion** about how reforming our food



systems can help us all to achieve the SDGs.

- **Develop principles to guide governments** and other stakeholders looking to leverage their food systems to support the SDGs.
- **Create a system of follow-up and review** to ensure that the Summit's outcomes continue to drive new actions and progress.

### Significance of UN Food Systems Summit

- It will be conducted with an aim to **strategize the actions for positive change in Agri-food systems** in the World to realize the vision of the 2030 Agenda for Sustainable Development.
- The Summit will focus on **levers and pathways to shape food systems nationally and globally** to accelerate progress in the SDGs.
- The grass root dialogues offer a unique opportunity to various stakeholders to **involve and provide inputs for sustainable food systems** in India.
- The Summit will **awaken the world to the fact that we all must work together** to transform the way the world produces, consumes and thinks about food.

### 3.17 International Day for Monuments and Sites

Recently, the United Nations has celebrated the **International Day for Monuments and Sites** on April 18th.

#### International Day for Monuments and Sites

- The **theme** for International Day for Monuments and Sites 2021 is “**Complex Pasts: Diverse Futures**”.
- The day is promoted by the **International Council on Monuments and Sites (ICOMOS)**.
- The day is dedicated to **recognising sites of historical importance, raising awareness regarding them, and stressing the need to restore and preserve them**.

#### History of International Day for Monuments and Sites





- ICOMOS in 1982 had decided to **celebrate April 18** as the **International Day for Monuments and Sites or World Heritage Day**.
- It was **approved by UNESCO in 1983** during its 22nd General Conference.

#### What does the theme ‘Complex Pasts: Diverse Futures’ mean?

- The UNESCO website explains this year’s theme “**Complex Pasts: Diverse Futures**” i.e. **the history of a place can involve many points of view**.
- The conservation of cultural heritage **requires careful examination of the past**, and its practice demands provision for the future.
- The **addressing of difficult and often contested histories involves complex conversations** with different stakeholders, avoiding biased views and interpretations of the past.
- It acknowledges **global calls for greater inclusion and recognition of diversity** and invites all of us to reflect on, interpret and review existing narratives.

#### World Heritage Sites in India

- India is home to **38 UNESCO World Heritage Sites**, out of the 1121 such spots identified around the world.
- Of these, **30 are ‘cultural’**, such as the Ajanta Caves, Fatehpur Sikri, Hampi monuments and the Mountain Railways of India, and **7 are ‘Natural’**, including Kaziranga, Manas and Nanda Devi National Parks.
  - **One is classified as ‘Mixed’**, the **Khangchendzonga National Park**.
- In 2019, **‘Jaipur City’ became the 38th addition** to the India list under Culture.

#### International Council on Monuments and Sites (ICOMOS)

- It is a **non-governmental international organisation** dedicated to the **conservation of the world’s monuments and sites**.
- It works for the **conservation and protection of cultural heritage places**.
- It is a network of experts that benefits from the **interdisciplinary exchange of its members**.
- Its mission is to **promote the conservation, protection, use and enhancement** of monuments, building complexes and sites.



- It is an **Advisory Body of the World Heritage Committee** for the implementation of the **World Heritage Convention of UNESCO**.

### 3.18 State of Population Report 2021

Recently, the **United Nation Population Fund (UNFPA)** has released the **State of Population Report 2021**.

- The **lack of bodily autonomy** may have worsened during the coronavirus pandemic, placing record numbers of women and girls at risk of gender-based violence and harmful practices such as early marriage.
- The report also noted that a **woman's power to control her own body is linked to how much control she has in other spheres of her life**, with higher autonomy associated with advances in health and education.
- The report documented several ways through which **bodily autonomy of not only women and girls, but also men and boys, is violated**, with factors such as disability worsening the situation.
- It also noted that **punitive legal environments, combined with stigma, discrimination and high levels of violence**, placed gay men and other men who have sex with men, at high risk of HIV infection.
- The report also documents many other ways that the **bodily autonomy of women, men, girls and boys is violated**, revealing that:
  - Twenty countries or territories have **"marry-your-rapist" laws**, where a man can escape criminal prosecution if he marries the woman or girl he has raped.
  - Forty-three countries have **no legislation addressing the issue of marital rape** (rape by a spouse).
  - More than 30 countries **restrict women's right to move around outside the home**.
  - Girls and boys with disabilities are nearly **three times more likely to be subjected to sexual violence**, with girls at the greatest risk.
- The report shows that in countries where data are available:
  - **Only 55 per cent of women** are fully empowered to make choices over



health care, contraception and the ability to say yes or no to sex.

- **Only 71 per cent of countries** guarantee access to overall maternity care.
- **Only 75 per cent of countries** legally ensure full, equal access to contraception.
- **Only about 80 per cent of countries** have laws supporting sexual health and well-being.
- **Only about 56 per cent of countries** have laws and policies supporting comprehensive sexuality education.

### United Nation Population Fund (UNFPA)

- It is the **United Nations sexual and reproductive health agency**.
- Its mission is to deliver a world where **every pregnancy is wanted, every childbirth is safe** and every young person's potential is fulfilled.
- It is formally named the **United Nations Population Fund**.
- It was created in 1969, the same year the United Nations General Assembly declared **parents have the exclusive right to determine freely and responsibly the number and spacing of their children**.

### 3.19 Renewed Tension between Russia and the Czech Republic

Recently, a day after the **Czech Republic expelled 18 Russian diplomats**, the Russia retaliated by announcing it would **send back 20 Czech diplomats**, exacerbating relations that have already been strained in recent times.

#### Tension between Russia and Czech Republic

- Prague had accused **Russian embassy officials** of being **intelligence operatives**.
- It said that it suspected **Russia of being involved in a 2014 explosion** at an arms depot that left two dead.
- In June 2020, Russia was accused of being behind a **poisoning scare targeting Czech politicians**, including the mayor of Prague.
- Russia offered **scathing criticism of the Czech Republic's decision** by saying that Prague wants to fulfill its desire to please US against the background of recent US



sanctions against Russia.

### Implications of tensions between Russia and Czech Republic

- The diplomatic escalation between Prague and Moscow is believed to be the **most serious since 1989**, when the Soviet domination of Eastern Europe ended.
- It adds to the **worsening of relations between the West and Russia**, which are already being tested by Russia's military buildup on its western frontier as well as in Crimea.
- Czechs have **exposed the lengths that the GRU intelligence agency will go to** in their attempts to conduct dangerous and malign operations.
- The **US has said that it stands with its NATO ally** in its firm response against Russia's subversive actions on Czech soil.

### 3.20 World Press Freedom Index

Recently, the **Reporters Without Borders (RSF)** has released the 2021 edition of **World Press Freedom Index**.

#### Key Highlights of 2021 World Press Freedom Index

- It ranks 180 countries, **topped by Norway** followed by **Finland and Denmark**, while **Eritrea is at the bottom**.
- **China** is ranked **177**, and is only above **North Korea at 179** and **Turkmenistan at 178**.
- In the **South Asian** neighbourhood, **Nepal is at 106**, **Sri Lanka at 127**, **Myanmar (before the coup) at 140**, **Pakistan at 145** and **Bangladesh at 152**.
- The report said that **Asia Pacific's authoritarian regimes** have used the Covid-19 pandemic to perfect their methods of **totalitarian control of information**.
  - It also highlighted that the **'dictatorial democracies'** have used it as a pretext for **imposing especially repressive legislation** with provisions combining propaganda and suppression of dissent.
- The report noted that **only 12 of the Index's 180 countries (7%)** can claim to offer a favourable environment for journalism.



- It shows that journalism, the main vaccine against disinformation, is **completely or partly blocked in 73% of the 180 countries** ranked by the organisation.

### India and World Press Freedom Index 2021

- India has **not slipped further** on the World Press Freedom Index 2021.
  - **India is ranked 142** after it had **consistently slid down** from 133 in 2016.
- It continues to be counted among the countries classified **“bad” for journalism**.
  - India shares the “bad” classification with **Brazil, Mexico and Russia**.
- India is termed as one of the **most dangerous countries for journalists** trying to do their jobs properly.
- The latest report has blamed an **environment of intimidation** created by government supporters for any critical journalist, who is marked as “anti-state” or “anti-national”.
- The journalists are **exposed to every kind of attack**, including police violence against reporters, ambushes by political activists, and reprisals instigated by criminal groups or corrupt local officials.

### World Press Freedom Index

- It is an **annual report** published every year since 2002 by **Reporters Without Borders (RSF)**.
- It is a **qualitative analysis combined with quantitative data** on abuses and acts of violence against journalists during the period evaluated.
- The countries have been given **scores ranging from 0 to 100**, with 0 being the best possible score and 100 the worst, ever since the 2013 index.
- The Index ranks **180 countries and regions** according to the level of freedom available to journalists.
- It is a snapshot of the media freedom situation based on an **evaluation of pluralism, independence of the media, quality of legislative framework and safety of journalists** in each country and region.
- It **does not** rank public policies even if governments obviously have a major impact on their country’s ranking.



### Reporter Without Borders (RSF)

- It is an **international journalism not-for profit body** based in Paris.
- It is an **independent NGO with consultative status** with the United Nations, UNESCO, the Council of Europe and the International Organization of the Francophonie (OIF).
- It was **founded by four journalists** in the southern French city Montpellier in 1985.

### 3.21 Boao Forum for Asia

Recently, the **Chinese President Xi Jinping** has said that the international affairs should be conducted by way of negotiations and discussions, and the future destiny of the world should be decided by all countries at the **Boao Forum on Asia**.

#### Boao Forum for Asia

- It is a **non-governmental and non-profit** international organization.
- It is a **platform for dialogs among leaders** of national governments, industrial and business circles, and academic circles of countries in Asia and other continents.
- Its purpose is to **promote and deepen the economic exchange, coordination, and cooperation within Asia and between Asia** and other parts of the world.
- It aims to offer a **high-end dialog platform for governments, enterprises, experts, and scholars** to jointly discuss economy, society, and environment and other relevant issues.
- It was proposed in 1998 by Fidel V. Ramos, former President of the **Philippines**, Bob Hawke, former Prime Minister of **Australia**, and Morihiro Hosokawa, former Prime Minister of **Japan**.
- It was **formally inaugurated** on February 27, 2001.
- **Boao, Hainan Province, the People's Republic of China** serves as the permanent site of BFA Headquarters.
- It is **modelled on** the World Economic Forum held annually in Davos, Switzerland.
- **India** is a **member** of Boao Forum for Asia.



### 3.22 UN Economic and Social Council (ECOSOC)

Recently, India has been elected by acclamation to three bodies of the **UN Economic and Social Council (ECOSOC)**.

- India was elected by acclamation to the **Commission on Crime Prevention and Criminal Justice** for a three-year term beginning January 1, 2022.
  - **Austria, Bahrain, Belarus, Bulgaria, Canada, France, Ghana, Libya, Pakistan, Qatar, Thailand, Togo and the US** were also elected by acclamation.
  - **Brazil, Dominican Republic, Paraguay, Chile, Cuba** were elected by secret ballot.
- India was elected by acclamation to the **Executive Board of the UN Entity for Gender Equality and the Empowerment of Women (UN Women)** for a three-year term beginning on January 1, 2022.
  - **Afghanistan, Australia, Bangladesh, Cameroon, Colombia, the Dominican Republic, Egypt, Gambia, Guyana, Kenya, Monaco, Poland, South Africa, Thailand, Turkmenistan and Ukraine** were also elected by acclamation.
- India was elected to the **Executive Board of the World Food Programme**, along with **France, Ghana, the Republic of Korea, Russia and Sweden** by acclamation for a three-year term beginning on 1 January 2022.

#### **Commission on Crime Prevention and Criminal Justice**

- It was established by the **Economic and Social Council (ECOSOC) resolution 1992/1**, upon request of General Assembly (GA) resolution 46/152.
- It acts as the **principal policymaking body of the United Nations** in the field of crime prevention and criminal justice.
- It offers Member States a forum for **exchanging expertise, experience and information in order to develop national and international strategies**, and to identify priorities for combating crime.
- It is the preparatory body to the **United Nations Crime Congresses**.

#### **UN Entity for Gender Equality**





- In July 2010, the **United Nations General Assembly created UN Women, the United Nations Entity for Gender Equality and the Empowerment of Women.**
- The UN Women is the UN entity dedicated to **gender equality and the empowerment of women.**
- It **merges and builds on the important work of four previously distinct parts** of the UN system, which focused exclusively on gender equality and women's empowerment:
  - Division for the Advancement of Women (DAW)
  - International Research and Training Institute for the Advancement of Women (INSTRAW)
  - Office of the Special Adviser on Gender Issues and Advancement of Women (OSAGI)
  - United Nations Development Fund for Women (UNIFEM)

### World Food Programme

- It is the **leading humanitarian organization saving lives and changing lives**, delivering food assistance in emergencies and working with communities to improve nutrition and build resilience.
- The WFP's efforts focus on **emergency assistance, relief and rehabilitation, development aid** and special operations.
- It provides services to the **entire humanitarian community**, including passenger air transportation through the UN Humanitarian Air Service.
- It is governed by a **36-member Executive Board.**
- It works closely with its two Rome-based sister organizations, the **Food and Agriculture Organization** of the United Nations and the **International Fund for Agricultural Development.**

### UN Economic and Social Council (ECOSOC)

- The **UN Charter established ECOSOC in 1945** as one of the six main organs of the United Nations.
- It is at the heart of the **United Nations system to advance the three dimensions of sustainable development** – economic, social and environmental.



- It is the **central platform for fostering debate and innovative thinking**, forging consensus on ways forward, and coordinating efforts to achieve internationally agreed goals.
- ECOSOC links a **diverse family of UN entities dedicated to sustainable development**, providing overall guidance and coordination.

### 3.23 Tyrannosaurus Rex

Recently, a study by paleontologists from the Netherlands have published a report that **Tyrannosaurus had a preferred walking speed of just 5 kmph** which is about the same as the average walking speed of humans.

#### Tyrannosaurus Rex

- It is considered the **most fearsome eating machine** to have evolved on Earth.
- It lived toward the **end of the Cretaceous period**, around 66 million to 68 million years ago.
- It is believed that an **adult member of the species stood 12 feet tall and 40 feet long**, and weighed between 5,000 to 7,000 kg.
- The dinosaur inhabited what is today's **western United States** and it was **not found in India**.
  - The **fiercest of all Indian dinosaurs** was probably the **Rajasaurus narmadensis**, followed by another specimen of the Abelisauridae family, the **Indosuchus raptorius**.
- The habitat of the T. Rex could have extended from as far as **Alaska in North America up until Mexico in the south**.

#### Research on Tyrannosaurus Rex's Speed

- The studies by paleontologists over the years have already **disproven the rapid speed that the T. Rex is portrayed**.
- The previous studies placed the **T. Rex's walking speed between 7.2-10.8 kmph which is the maximum speed** that its bone structure researchers believed could have permitted.
- The new research reduces the previous estimates by more than half as the Dutch



paleontologists made simulations of the **vertical movement of the dinosaur's tail**, something not done before.

### 3.24 US prepares to recognise Armenian genocide

Recently, the US President Joe Biden has said that the **US administration** is preparing to formally acknowledge the **Armenian Genocide**.

#### Armenian Genocide

- It was the **systematic killing and deportation** of hundreds of thousands of **Armenians by the Ottoman Empire**.
- It occurred more than a century ago between **1915 to 1922**.
- It is **during the First World War**, thousands of Armenians perished due to killings, starvation and disease, when they were deported by Ottoman Turks from eastern Anatolia.
- It is difficult to estimate the total number of Armenians who died during the genocide, but the **Armenian diaspora says that approximately 1.5 million died**.
  - Turkey rejects that number and claims that some **300,000 Armenians may have perished**.
  - The **International Association of Genocide Scholars** estimates that more than 1 million Armenians may have died.

#### Implications of recognizing Armenian Genocide

- The researchers say that the acknowledgement by the US government would have **little legal impact on Turkey**, other than becoming a **cause for embarrassment for the country**.
- Some researchers have asserted and drawn comparisons between the **Holocaust and the Armenian Genocide** and the acknowledgement of it in the international community may be unwelcome and unpalatable for Turkey.
- The US's move indicates that the **White House has chosen to focus on one of Joe Biden's 2020 campaign promises**, which was officially recognising the Armenian Genocide.
- The move could **deteriorate the US's relations with Turkey and government**

**official** told that there was a possibility that Biden may just change his mind.

- Turkey could also **slow non-NATO operations at Incirlik Air Base, located in Adan** that American forces use as a base and a station for equipment in the region.
- The report indicates that **Turkey could engage in provocation that would result in new sanctions** against the country or the reimposition of the ones that had been suspended.

### Arguments of Turkey on US's decision

- The Turkey's Foreign Minister has said that such moves would only **set back the already strained relationship** between Washington D.C. and Ankara, both of whom are North Atlantic Treaty Organization allies.
- The ties between the US and Turkey have been strained over a range of issues that include **Turkey's purchase of Russian S-400 defence systems, foreign policy differences with regard to Syria, human rights** etc.
- In retaliation for recognising the Armenian Genocide, a report suggests that **Turkey might to try to stymie or delay specific policies to aggravate the Biden administration.**

### 3.25 Crisis in Chad



Recently, **Chad's longest serving president Idriss Deby** died of injuries sustained during



clashes with the rebel group **FACT (Front for Change and Concord in Chad)** on the frontlines.

- The former French colony is now **prime outpost of the West in fighting Islamist militants** across the Sahel which is the vast region between the Sahara and the Sudanian savanna.
- France still has a **strong military presence in the region** and had provided support to Déby in fighting political opponents and allies.
- France has defended the Chadian army's takeover, and Macron called upon the **military government to foster stability, inclusion, dialogue and democratic transition.**

#### **France's military presence in the region**

- The motive behind military operations in the Sahel countries is to fight Islamist groups, monitor political ambitions, and train future African leaders.
- Chad has been **France's most effective and stable Sahel ally** in achieving these goals.
- France has nearly 5,100 French soldiers in the Sahel region for **France's Operation Barkhane** which began in 2014 to lead counter-terrorism operations in the Sahel region.
- France says its objective is to **help Sahel nations maintain territorial integrity and prevent rise of Islamist groups** that threaten France and the West.

#### **Chad**

- It is a **landlocked state** in north-central Africa.
- It is bounded on the north by **Libya**, on the east by **Sudan**, on the south by the **Central African Republic**, and on the west by **Cameroon, Nigeria, and Niger.**
- It is the **fifth largest country** on the African continent.

#### **Sahel region of Africa**

- It is a **semi-arid region** of western and north-central Africa extending from **Senegal eastward to Sudan.**
- It forms a **transitional zone between the arid Sahara (desert)** to the north and the



belt of **humid savannas to the south.**

- The Sahel stretches from **Senegal** on the Atlantic coast, through parts of **Mauritania, Mali, Burkina Faso, Niger, Nigeria, Chad and Sudan** to **Eritrea** on the Red Sea coast.

### 3.26 Military Expenditure Report by Stockholm International Peace Research Institute (SIPRI)

Recently, the **Stockholm International Peace Research Institute (SIPRI)** has released the report on **military expenditure and arms trade globally.**

- The **US accounted for 39 per cent** of the money spent on military globally, **China accounted for 13 per cent**, and **India accounted for 3.7 per cent** of the globe's share.
- The **US spent a total of \$778 billion** in 2020, **China spent \$252 billion** and **India's military expenditure was \$72.9 billion.**
- India's spending since 2019 **grew by 2.1 per cent** but the increase for **China was more moderate, at 1.9 per cent.**
- The US saw a **4.4 per cent growth** over its 2019 expenditure.
- The United States' military spending was **3.7 per cent of its GDP** while the corresponding numbers for **China and India were 1.7 per cent and 2.9 per cent respectively.**
- The American military expenditure **dropped by 10 per cent**, but **China saw a 76 per cent growth** while **India's military spending grew by 34 per cent** between 2011 and 2020.
- The report highlighted that **military spending in Asia and Oceania was 2.5 per cent higher** in 2020 than in 2019 and 47 per cent higher than in 2011.
- The other top spenders included **Russia with \$61.7 billion, the UK at \$59.2 billion, Saudi Arabia at \$57.5 billion**, followed by **Germany and France at just under \$53 billion** each.
- The **five biggest spenders in 2020** were the **United States, China, India, Russia and the United Kingdom**, which together accounted for 62 per cent of world military spending.





### SIPRI Military Expenditure Database

- It provides **military expenditure data by country for the years 1949–2020** in local current prices, constant US dollars, current US dollars, as a share of gross domestic product, per capita and as a share of general government expenditure.
- The SIPRI military expenditure data includes **all current and capital expenditure** on the:
  - Armed forces, including peacekeeping forces;
  - Defence ministries and other government agencies engaged in defence projects;
  - Paramilitary forces, when judged to be trained and equipped for military operations; and
  - Military space activities
- The **civil defence and current expenditure on previous military activities**, such as veterans' benefits, demobilization, conversion, weapon destruction and military involvement in non-military activities (e.g. policing) are **excluded**.

### 3.27 Chandler Good Government Index (CGGI)

Recently, the **first edition** of annual series of **Chandler Good Government Index (CGGI)** was released.

- **Finland came top with 0.848 points** ahead of **Switzerland and Singapore**, while **Zimbabwe was Nigeria's runner up** followed by **Venezuela** at the bottom of the log.
- **Mauritius**, with an Index score of 0.5670 and at number 38 on the log, was **Africa's best performer**.
- It highlights a **key need for 'pracademics' in government** i.e. people who combine a rigorous understanding of research and data with a practical and grounded sense of what governments need to do to succeed.
- It taps over **50 publicly available global data sources** such as the World Trade Organisation, United Nations and World Bank.
- The report noted that **countries that have done well under this pillar are all**





**market economies** with sound property rights and stable business regulations.

- **India** has been ranked **49th** with a **score of 0.516**.
- The **BRICS countries** ranking are China (40th), Russia (48th), India (49th), Brazil (67th) and South Africa (70th).
- The ranking among the **South Asian nations** are India (49th), Nepal (92nd), Pakistan (90th) and Sri Lanka (74th).

### **Chandler Good Government Index (CGGI)**

- It is the **first edition** which classifies **104 countries** in terms of **government capabilities and outcomes**.
- It shows the **importance of measuring and investing** in governance capabilities that matter.
- The index focuses on **seven pillars**: leadership and foresight; robust laws and policies; strong institutions; financial stewardship; attractive marketplace; global influence and reputation; and helping people rise.
- It is a **practical tool** for all governments to understand and benchmark their capabilities.

### **3.28 Saudi Green Initiative and the Middle East Green Initiative**

Recently, the **Crown Prince** Mohammed bin Salman bin Abdulaziz, Deputy Prime Minister of the **Kingdom of Saudi Arabia** has launched two initiatives i.e. '**Saudi Green Initiative**' and the '**Middle East Green Initiative**'.

- The ongoing COVID19 pandemic is the **need for collective action among members of the international community** to effectively address global challenges such as pandemics and climate change.
  - The pandemic has created an **unprecedented crisis** that demands an exceptional global response.
- The motto "**safeguard the planet**" was one of the main pillars of the **Saudi G20 presidency**.
- The Saudi leadership of the summit highlighted how **climate change had negatively impacted the planet, people's lives and their wellbeing**.



- Saudi Arabia has been sharing its **expertise and knowhow with its neighbouring countries to reduce carbon emissions** resulting from hydrocarbon production in the region by 60% and globally by 10%.

### Saudi Green Initiative

- It aims to **raise the vegetation cover, reduce carbon emissions, combat pollution and land degradation**, and preserve marine life.
- Under Saudi Green Initiative, **10 billion trees will be planted in the Kingdom.**
- It aims to **reduce carbon emissions by more than 4% of global contributions**, through a renewable energy programme that will **generate 50% of Saudi's energy from renewables by 2030.**
- It aims at **raising the percentage of its protected areas to more than 30%** of its total land area, representing roughly 6 lakh sq km, exceeding the global target of 17%.

### Middle East Green Initiative

- Under this initiative, Saudi Arabia will work with the **Gulf Cooperation Council countries and regional partners** to plant an additional **40 billion trees in the West Asian region.**
- It represents **5% of the global target of planting one trillion trees** and reducing 2.5% of global carbon levels.

### 3.29 World Happiness Report 2021

Recently, the **World Happiness Report 2021** was released by the United Nations.

- **Finland** has been ranked as the **happiest country** in the world.
  - It is followed by **Iceland, Denmark, Switzerland, The Netherlands, Sweden, Germany and Norway.**
- **India's ranking** has been improved to **139** as compared to **144 in 2020 and 140 in 2019.**
- The report has provided that **Pakistan is on 105th, Bangladesh on 101st and China on 84th.**



- The people in war-torn **Afghanistan** are the **most unhappy** with their lives, followed by **Zimbabwe (148), Rwanda (147), Botswana (146) and Lesotho (145)**.
- The **United States ranks at 19th place** for happiness, despite being one of the richest countries in the world.

### World Happiness Report

- It is published by the **United Nations Sustainable Development Solutions Network (UN-SDSN)**.
- It is powered by data from the **Gallup World Poll and Lloyd's Register Foundation**.
- It ranks the world's 149 countries on **"how happy their citizens perceive themselves to be"**.

### 3.30 Immunisation Agenda 2030

Recently, the global agencies like the **World Health Organization (WHO)** and **UNICEF** have set a target of avoiding **50 million vaccine-preventable infections** in this decade as part of a new immunisation programme.

#### Immunisation Agenda 2030

- The **Immunisation Agenda 2030 (IA2030)** was launched during **World Immunisation Week**.
- The IA2030 is based on learnings from **Global Vaccine Action Plan (GVAP)**.
- It also aims to **address the unmet targets of the GVAP** that were initially to be fulfilled as part of the global immunisation strategy of the **'Decade of vaccines' (2011–2020)**.
- It is underpinned by **four core principles** i.e. it puts **people** in the centre, is led by **countries**, implemented through **broad partnerships**, and **driven by data**.

#### Targets of Immunisation Agenda 2030

- It intends to **reduce the number of zero-dose children** by 50 per cent.
  - The zero-dose children are those who have **received no vaccines through immunisation programmes**.



- The programmes hope to do this by **extending immunisation services to 13 million such children.**
- These constitute **65 per cent of more than 20 million infants** who do not receive a full course of even basic vaccines and miss out on new vaccines.
- IA2030 calls for introducing booster doses for **lifelong protection against diphtheria, pertussis and tetanus.**
- It also states new approaches to **reach unvaccinated children and resolve geographical inequalities.**

### Benefits of Immunisation Agenda 2030

- The new programme will focus on a **'bottoms-up' approach**, in contrast to the GVAP that followed a 'top-down' one.
- The UN agencies aim to ensure through IA2030 that the **benefits of immunisation are shared equitably** among and within countries.
- The programme will **give priority to populations that are not currently being reached**, particularly the most marginalised communities, those living in fragile and conflict-affected settings and mobile populations.
- It will provide a **strong foundation for the global immunisation strategy** in the decade 2021-2030.
- It will contribute to achieving the **UN-mandated sustainable development goals or SDGs, specifically SDG3** which says ensure healthy lives and promote well-being for all at all ages.

## NATIONAL

### 4.1 AIM-PRIME (Program for Researchers on Innovations, Market-Readiness & Entrepreneurship)

Recently, the NITI Aayog has launched the **'AIM-PRIME' (Program for Researchers on Innovations, Market-Readiness & Entrepreneurship).**

- It is an initiative of the **NITI Aayog's Atal Innovation Mission (AIM)** in partnership with **Bill & Melinda Gates Foundation (BMGF).**
- It is a nationwide program which will be **implemented by Venture Center (a non-profit technology business incubator).**



- The first cohort of the program is **open to technology developers** (early-stage deep tech start-ups, and scientists/ engineers/ clinicians).
  - The program is also **open to CEOs and senior incubation managers of AIM Funded Atal Incubation Centers** that are supporting deep tech entrepreneurs.
- It is catalyzed by the office of the **Principal Scientific Advisor** and the **Pune Knowledge Cluster**.

### Significance of AIM-PRIME

- It is an initiative to **promote and support science-based deep-tech startups & ventures** across India.
- It aims to provide a **major push towards deep technology** and driving the country to become a digitally transformed nation.
- It is aimed at **addressing specific issues through training and guidance** over a period of 12 months.
- The candidates selected for the program will get **access to in-depth learning** via a comprehensive lecture series, live team projects, exercises, and project-specific mentoring.
  - They will also have access to a **deep tech startup playbook, curated video library, and plenty of peer-to-peer learning opportunities**.
- It is specifically **tailored for the rapid scaling up of deep-tech science ventures in India**, providing not just the necessary intellect and support but also the exposure they rightly deserve.
- It will enable **translation of science-based deep tech research to innovation** that enables market ready entrepreneurship drawing from national and global best practices.
- Its hallmark shall be **hands-on practical insights and mentoring from experts and mentors** who have been nurturing science-based deep-tech startups in global innovation hotspots as well as in India.

### Eligibility under AIM-PRIME

- **Startup Leadership Team:** The technology developers and translators from early

stage deep tech startups:-

- Scientists/ Engineers/ Clinicians with advanced degrees
- Having a formal and full-time employment engagement with a startup
- Applicant should be advancing a science-based technology (at any TRL level)
- The proposed technology should have significant knowledge intensity or novelty
- **Faculty Entrepreneurs:** Applied researchers/ technology developers from academic/ R&D Labs with firmed up technology commercialization/entrepreneurship plans:-
  - Scientists/ Engineers/ Clinicians with advanced degrees
  - Having a formal and full-time employment engagement with an academic/ R&D institution
  - Applicant should have identified a science-based technology (at any TRL level) suitable for developing a new enterprise
  - The proposed technology should have significant knowledge intensity or novelty
- **Incubation Managers:** The CEOs/ Senior Managers of AIM funded AICs:-
  - Undergraduate degree in any scientific discipline
  - Having a formal and full-time employment engagement with an AIM funded AICs
  - Applicants AIC should have at least one pre-incubatee that is a science-based deep tech startup whose technology should have significant knowledge intensity or novelty.
- **All program participants shall be:**
  - Applicant shall be a startup or an incubator
  - Each applicant will nominate preferably 2 participants
  - All participants shall be Indian citizens.

## 4.2 MyNEP2020 Platform

Recently, the Union Education Minister has launched the “MyNEP2020” Platform of National Council for Teacher Education (NCTE) Web Portal.

### MyNEP2020 Platform

- It seeks to invite suggestions from the stakeholders for preparing draft for development of **National Professional Standards for Teachers (NPST)** and **National Mission for Mentoring Program membership (NMM)**.
- The NCTE will work in close consultation with individuals/organizations for the preparation of documents on NPST and NMM.
- It envisages the **participation of teachers, education professionals, academicians, & other stakeholders** in preparing the documents on teacher policy.
- The platform will help in **creating a sustainable and positive change** in the teacher’s education sector.

### What is National Council for Teacher Education (NCTE)?

- It was set up by Government of India in 1973 as an **advisory body to the government at the Center and the State**, on matters related to teacher education.
- In 1995, **National Council for Teacher Education (NCTE) was conferred the status of statutory body** in pursuance to the National Council for Teacher Education Act, 1993.
- It sets up **norms and standards for teacher’s education** right from pre-school teacher education to post graduate level teacher education.
- The main objective of the NCTE is:
  - **To achieve planned and coordinated development** of the teacher education system throughout the country; and
  - **The regulation and proper maintenance of Norms and Standards** in the teacher education system and for matters connected therewith.

## 4.3 Utkala Dibasa or Utkala Divas

Recently, the Prime Minister of India has **greeted the people of Odisha** on the occasion





of **Utkala Dibasa or Utkala Divas.**

- **On April 1, 1936**, Odisha became a **separate province**, after a long struggle of over three centuries.
- The **formation of Odisha province under the British rule**, separated from Bengal and Bihar, marked the beginning of a new journey for the state.
- **Odisha was once part of Kalinga ruled by emperor Ashok**, and later by Kharavela, remembered as a conqueror and the champion of Jainism, before Mughals invaded and wrested it.

**Utkala Dibasa or Utkala Divas**

- **Odisha Day**, also known as **Utkala Divas and Utkala Dibasa**, is celebrated on April 1 every year in memory of the entire struggle that went into gaining a separate political identity for the state.
- Odisha was initially named 'Utkala' as it was a **land of majestic art and crafts** where some of the finest artisans settled down.
- The land is **mentioned in Ramayana and Mahabharata** as Kantara which altogether included Kalahandi, Koraput and Bastara.

#### 4.4 National Policy for Rare Diseases 2021

Recently, the **Union Minister of Health & Family Welfare** has launched the **National Policy for Rare Diseases 2021**.

- The Government of India has formulated a **National Policy for Treatment of Rare Diseases (NPTRD)** in July, 2017.
- The **Public Health and Hospitals is primarily a State subject** and a limiting factor in its implementation was bringing States on board and lack of clarity on how much Government could support in terms of tertiary care.
- The policy had **implementation challenges and gaps**, including the issue of cost effectiveness of supporting which made it not feasible to implement.
- **An Expert Committee** was constituted by Ministry of Health and Family Welfare in November, 2018 to review the NPTRD, 2017.



### Key Highlights of National Policy for Rare Diseases 2021

- The Centre of Excellence (CoE) will be provided **one-time financial support of up to Rs 5 crores** for upgradation of diagnostics facilities.
- A provision for financial support up to Rs. 20 lakhs under the **Umbrella Scheme of Rashtriya Arogya Nidhi** is proposed for treatment.
- The beneficiaries for such financial assistance **would not be limited to BPL families**, but the benefit will be **extended to about 40% of the population**, who are eligible under Pradhan Mantri Jan Arogya Yojana.
  - It will **cover about 40 per cent of the population** who are eligible under the Pradhan Mantri Jan Arogya Yojana.
- The policy envisages creation of a **national hospital based registry of rare diseases** so that adequate data is available for definition of rare diseases and for research and development.

### Significance of National Policy for Rare Diseases 2021

- The policy aims to **lower the high cost of treatment for rare diseases** with increased focus on indigenous research with the help of a National Consortium.
  - The **increased focus of research and development and local production of medicines** will lower the cost of treatment for rare diseases.
- It focuses on **early screening and prevention** through primary and secondary health care infrastructure such as Health and Wellness Centres and District Early Intervention Centres (DEICs).
- It aims to **strengthen tertiary health care facilities for prevention and treatment of rare diseases** through designating 8 health facilities as Centre of Excellence.
- It envisages a **crowd funding mechanism** in which corporates and individuals will be encouraged to extend financial support through a robust IT platform for treatment of rare diseases.
  - The funds so collected will be utilised by Centres of Excellence (CoEs) for **treatment of all three categories of rare diseases** as first charge and then the balance financial resources could also be used for research.



### Need for National Policy for Rare Diseases 2021

- The **field of rare diseases is very complex and heterogeneous** and prevention, treatment and management of rare diseases have multiple challenges.
- The **early diagnosis of rare diseases is a major challenge** owing to a variety of factors that include lack of awareness among primary care physicians, lack of adequate screening and diagnostic facilities etc.
- There are **fundamental challenges in the research and development** for the majority of rare diseases as relatively little is known about the pathophysiology or the natural history of these diseases.
- The rare diseases are also **difficult to research upon as the patients' pool is very small** and it often results in inadequate clinical experience.
- The **availability and accessibility to medicines are also important** to reduce morbidity and mortality associated with rare disease.

### 4.5 Chenab Arch Bridge

Recently, the project managers have announced that the half-a-kilometre long arch of the **Chenab Bridge** is all set to be completed.

- At present, the Kashmir link means a **25-km stretch from Udhampur to Katra**, an **18-km stretch from Banihal to Qazigund** in the Valley and thereafter the **118-km Qazigund to Baramulla line**.
- The only **missing piece in the link is the Katra-Banihal stretch**, and the bridge over Chenab was the main engineering hurdle holding up the progress all these years.
- The bridge is part of an **ambitious 272-km rail link project** and is being constructed by the Northern Railway at an estimated cost of ₹28,000 crore.

### Chenab Arch Bridge

- It is a **1.3 km-long bridge** that is being built across the **Chenab River**.
- It is being constructed at a height of **359 metres from the riverbed**.
- It will be at a height **35 meters more than the Eiffel Tower** in Paris and at five times the height of the Qutab Minar in Delhi.



- It is being **built on the Katra-Banihal railway line** at village Kauri in the Reasi district.
- The bridge forms the **crucial link in the 111-km stretch between Katra and Banihal** which is part of the Udampur- Srinagar-Baramulla section of the Kashmir Railway project.
- It is the **seventh-largest arch-shaped bridge in the world** as there is no support except on both sides of the river banks.
- The bridge will be able to **withstand earthquakes** with a magnitude of up to eight and high-intensity blasts.

#### Concerns associated with Chenab Arch Bridge

- It has been mired in controversy since its inception because it is **bang in the middle of Seismic Zone IV**.
- It is **nestled in the young, folding Himalayas** and making it a tough call for railway engineers.
- The biggest challenge was that the **550-meter arch, weighing 10,000 metric tons**, had to stand only with the support from the two embankments and without any intermediate pier.
- A lot of **precision artisanal work is also required** because of which workers need to scale the heights with safety gear and perform the various jobs.

#### Chenab River

- It is the **river of the Indian subcontinent** in northwestern India and northeastern and eastern Pakistan.
- It is formed by the confluence of two streams i.e. **Chandra and Bhaga**, in the western (Punjab) Himalayas in Himachal Pradesh.
- It flows west through Jammu & Kashmir between the **steep cliffs of the Siwalik Range (south) and the Lesser Himalayas (north)**.

#### 4.6 Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan (PM-KUSUM)

Recently, the **Rajasthan Renewable Energy Corporation Ltd (RRECL)** has commissioned

the country's first farm-based solar power project under the PM-KUSUM scheme.

## PM-KUSUM

- It is for farmers for **installation of solar pumps and grid connected solar and other renewable power plants** in the country.
- It aims to **add solar and other renewable capacity of 25,750 MW by 2022** with total central financial support of Rs. 34,422 Crore including service charges to the implementing agencies.
- The scheme has **three components**:
  - **Component-A:** Installation of 10 GW of renewable energy power plants of individual plant capacity up to 2 MW on barren and fallow land.
  - **Component-B:** Installation of 17.5 lakh standalone solar pumps of capacity up to 7.5 HP.
  - **Component-C:** Solarization of 10 lakh existing grid-connected agricultural pumps of pump capacity up to 7.5 HP.
- It will **open a stable and continuous source of income to the rural land owners** for a period of 25 years by utilisation of their dry/uncultivable land.

## Key Amendments in the PM-KUSUM Scheme Implementation Guidelines

### Amendments for Component-A

- The scope of the PM-KUSUM has been increased by including **pasturelands and marshy lands owned farmers**.
- The **size of solar plant has been reduced** so that small farmers can participate and completion period increased from nine to twelve months.
- The **solar power projects smaller than 500 kW may be allowed by States** based on techno-commercial feasibility to support small farmers.
- There shall be **no penalty to Renewable Power Generator (RPG) for shortfall in solar power generation** from minimum prescribed Capacity Utilization Factor (CUF).

### Amendments for Component-B

- The **MNRE will retain 33% of eligible service charges** for nation-wide Information, Education and Communication (IEC) activities.
- The ministry may **release 50% of eligible service charges** for the sanctioned quantity after placement of Letter of Award (LoA) for preparatory activities.
- The order allows **either one or both of the following two categories to participate** in the centralised tendering:
  - **Manufacturer of solar PV modules or manufacturer of solar pumps or manufacturer of solar pump controllers** using indigenous technology.
  - **Joint venture of any of manufacturers** mentioned above with system integrators.

#### **Amendments for Component-C**

- Under Component-C, individual farmers having **grid connected agriculture pumps** are being supported to solarise their pumps.
- The farmers will be **provided solar panels** and they will be able to use the generated solar power to meet the irrigation needs and sell the surplus solar power.
- The DISCOMs will **buy surplus power from the farmers at the pre-determined rate** to be decided by the respective State/SERC.

#### **Objective of PM KUSUM Yojana**

- Under PM KUSUM Yojana, **farmers, group of farmers, panchayat, co-operative societies can apply** to plant a solar pump.
- The **total cost involved in this scheme is divided into three categories** in which the Government will help farmers.
  - The **government will provide a subsidy of 60% to farmers and 30% of the cost will be given by Government in form of loans.**
  - The **farmers will only have to give 10%** of the total cost of the project.
- The **electricity generated from the solar panel** can be sold by the farmers.
  - The **money gained after selling electricity** can further be used for starting a new business.



#### 4.7 Supreme Court Portal for Assistance in Court's Efficiency (SUPACE)

Recently, the Chief Justice of India has launched the **Supreme Court Portal for Assistance in Court's Efficiency (SUPACE)**.

##### Supreme Court Portal for Assistance in Court's Efficiency (SUPACE)

- It is a tool that **collects relevant facts and laws** and makes them available to a judge.
- It is an **Artificial Intelligence (AI) portal** which is designed to make **research easier for judges**, thereby easing their workload.
- It is **not designed to take decisions**, but only to **process facts and to make them available to judges** looking for an input for a decision.
- It is a **perfect blend of human intelligence and machine learning** and 'a hybrid system', which works better with human intelligence.

##### Significance of Artificial Intelligence in Judiciary

- The portal has ensured that **AI only collects all relevant facts & law and makes it available to Judge** on their fingertips.
- The AI can **process words and figures in a better way** and the results only get better with more examples that are given to the system, to process.
- The AI **doesn't have access to feelings and emotions** and operates in areas of cognition, where understanding takes place only through language and symbols.
- The introduction of AI tool is a big step in **ensuring access to justice and will be helpful to Judiciary in reducing pendency** and delivering justice to needy people.

#### 4.8 Civil Defence Volunteer

Recently, the role of the **civil defence volunteers in the national capital has come under intense scrutiny** from being lauded for their work during the pandemic to facing allegations of high-handedness.





### Civil Defence Volunteer

- In Delhi, these are **men and women** who work under the **command of the district magistrates**.
- The overall command of Civil Defence Volunteer lies with the **divisional commissioner**, to which the DMs report.
- These volunteers are governed by the **Civil Defence Act, 1968** which has undergone multiple amendments.

### Eligibility for becoming a Civil Defence Volunteer

- A person who intends to apply for appointment to a **Civil Defence Corps** must fulfill the following conditions:
  - s/he shall be a **citizen of India or Bhutan or of Nepal**.
  - s/he shall have **completed the age of 18 years** provided that this age limit may be relaxed at the discretion of the competent authority up to a maximum of 3 years for any branch or category of the Corps.
  - s/he shall have **passed at least the primary standard**, that is to say, the fifth class, and this condition may be relaxed by the Controller at this discretion.
- **Both men and women** shall be eligible for appointment to the Corps.
- A person shall **not be entitled to be appointed to the Corps** unless he is found to be physically fit and mentally alert.
- Any service in the **National Volunteer Force and in the Armed Forces of the Union** shall be a special qualification.

### Jurisdiction of Civil Defence Volunteer

- According to the Civil Defence Act, 1968, civil defence is defined as any measure **“not amounting to actual combat that protects persons, property and places in India from hostile attack”**.
- The 2010 amendment to Civil Defence Act has **expanded the definition of civil defence by including disaster management** as one of the responsibilities.
- The basic role of the volunteers is to **assist the local administration**.



- During the pandemic, the volunteers **assumed the role of frontline workers** by way of participating in screening hotspots and distributing food for the needy.

#### What Civil Defence Volunteer cannot perform?

- In Delhi, Directorate of Civil Defence was **carved out of the Directorate of Home Guards** through a 2009 notification issued by the then Lieutenant Governor.
- The civil defence volunteers are **not authorised to issue challans** but they can assist officials who are authorised by the district administration to issue challans.
- The Delhi Police has said that civil defence volunteers have **no power to stop people using police barricades** and prosecute them for violation of Covid-19 appropriate behaviour.

#### 4.9 Durbar Move

Recently, a tradition is set to be broken in Jammu and Kashmir, with only “**sensitive records**” being taken from Jammu to Srinagar, unlike in previous years when the entire administration and records would be shifted during “**Durbar Move**”.

#### Durbar Move

- It is a **bi-annual shifting of the Civil Secretariat** and other offices of the state government from **Jammu to Srinagar in summer, and vice versa in winter**.
- It is done as **Jammu & Kashmir has two capitals** i.e. Kashmir during summer and Jammu during winter.
- It is a **tradition started 149 years ago** started by the **erstwhile Dogra rulers** who hailed from Jammu, but had expanded their boundaries to Kashmir.
- It was started by **Maharaja Ranbir Singh in the year 1872** to escape extreme weather conditions in these places.

#### Need for Durbar Move

- Jammu, Kashmir and Ladakh are very different from one another **geographically, linguistically and culturally**, and in those days were poorly connected by road.
- It is generally understood that the Durbar Move was started to **take the administration to the doorstep of the people of Kashmir** which is closer to



Ladakh.

- During summer, ruling from Kashmir also helped in **ensuring adequate supplies to Ladakh**, which is closer to Kashmir than Jammu, before the winter snowfall would cut off Ladakh.
- The practice also enabled **greater interaction and bonding among the people** of Jammu, Kashmir and Ladakh.

### Criticism of Durbar Move

- The voices of protest started during the late 1980s, over the **amount of money and time spent** on the exercise.
- The experts have **criticised the government for spending nearly Rs 200 crore** on this exercise every year when it did not have enough funds even to pay salary to its employees.
- In 2020, the Jammu & Kashmir High Court observed that there was **no legal justification or constitutional basis** for the Durbar Move tradition.
- The J&K High Court pointed out that the practice has **resulted in wastage of tremendous amount of time, efforts and energy** on inefficient and unnecessary activity.
- It observed that **valuable resources of the state (financial and physical) cannot be diverted** to completely non-essential usage when the Union Territory is unable to provide even basic essentials to its people.

### 4.10 Govt. to reboot dated Opium strategy

The Central government has decided to **rope in the private sector to commence production of concentrated poppy straw (CPS) from India's opium crop to boost the yield of alkaloids**, used for medical purposes and exported to several countries.

#### Alkaloids

- Alkaloids are a huge group of naturally **occurring organic compounds which contain nitrogen atom or atoms**(amino or amido in some cases) in their structures.
- These nitrogen atoms cause alkalinity of these compounds.
- Well-known alkaloids include **morphine, strychnine, quinine, ephedrine, and**

### nicotine.

- The medicinal properties of alkaloids are quite diverse. Morphine is a powerful narcotic used for the relief of pain, though its addictive properties limit its usefulness. Codeine, the methyl ether derivative of morphine found in the opium poppy, is an excellent analgesic that is relatively nonaddictive.
- **Poppy Straw:**
  - Poppy straw is the **husk left after the opium is extracted** from pods.
  - This poppy straw also contains a **very small morphine content** and if used in sufficient quantities, poppy straw can give a high.
  - **Possession, sale, use, etc.** of poppy straw is **regulated by the State Governments** under the **State Narcotic Drugs & Psychotropic Substances Rules**.
  - Farmers sell the poppy straw to those licensed by the State Governments to purchase poppy straw.
    - Any excess poppy straw is ploughed back into the field.
    - Poppy straw is one of the narcotic drugs under the **Narcotic Drugs & Psychotropic Substances Act 1985 (NDPS Act)**.
    - Hence, anyone possessing, selling, purchasing or using poppy straw **without a license or authorization or in violation** of any conditions of the license is liable to prosecution under the NDPS Act.
- **Current Extraction of Alkaloids:**
  - India currently only **extracts alkaloids from opium gum** at facilities controlled by the Revenue Department in the Ministry of Finance.
    - This entails farmers extracting gum by manually lancing the opium pods and selling the gum to government factories.
  - The Ministry has now decided to **switch to new technologies**, after trial cultivation by two private firms showed higher extraction of alkaloids using the **Concentrated Poppy Straw (CPS)**. Thus, the Government is mulling the idea of using public-private partnership (PPP).
- **Partnership Model:**

- Two types of Narcotic Raw Material (NRM) can be produced from opium poppy – **Opium gum and Concentrate of Poppy Straw (CPS)**.
- So far, only opium gum has been produced in India. The Government of India has now decided that CPS production should be commenced in India.
- The various stakeholders will frame an appropriate model including **public-private partnership (PPP)**, advise on the changes needed to the rules and laws to facilitate private investment, and recommend security measures to protect the crop and the final product.
- The firms carrying out the **trials faced legal hassles** in terms of getting relevant licences from the State governments to manufacture bulk alkaloids on their premises, this issue will need to be ironed out.
- As per the trials' findings, the **imported seeds of certain CPS varieties worked effectively in Indian fields** and their narcotic raw material yield was much higher from imported seeds instead of those used currently.
- Some firms also **cultivated CPS with hydroponic and aeroponic methods** under a greenhouse environment.
  - Both Hydroponics and Aeroponics are sustainable, water-conservative farming methods, differing only by the medium which is used in the growth of the plants.
- **Significance of the Move:**
  - While alkaloid extraction from the current opium crop using the CPS was found more than opium gum, it is possible to have two or three crop cycles in one year if CPS varieties of seeds are used in an indoor greenhouse environment.
  - **India's opium crop acreage has been steadily declining** over the years and using the CPS extraction method is expected to help cut the occasional dependence on imports of products like codeine (extracted from opium) for medicinal uses.

### Opium Cultivation In India

- After independence, the control over cultivation and manufacture of opium became **responsibility of the Central Government** with effect from April, 1950.



- At present the **Narcotics Commissioner** along with the subordinates exercises all **powers and performs all functions** relating to superintendence of the cultivation of the opium poppy and production of opium.
  - The Commissioner derives this power from the **Narcotic Drugs & Psychotropic Substances Act 1985 and Narcotic Drugs & Psychotropic Substances Rules, 1985.**
  - **License for manufacture** of certain types of narcotic drugs and psychotropic substances as well as permits for export and import of narcotic drugs, psychotropic and controlled substances are issued with the approval and permission of the Narcotics Commissioner.
- The Government of India announces the **licensing policy for cultivation of opium poppy every year**, prescribing the minimum qualifying yield for issue of or renewal of licence, maximum area that can be cultivated by an individual cultivator, the maximum benefit that can be allowed to a cultivator for damage due to natural causes, etc.
- The opium poppy can be cultivated only in such tracts as are **notified by the Government.**
  - At present these **tracts are confined to three States, viz. Madhya Pradesh, Rajasthan and Uttar Pradesh.**
  - **Mandsaur district** of Madhya Pradesh and **Chittorgarh and Jhalawar Districts of Rajasthan** constitute about **80% of the total area cultivated.**
- India is one of the few countries **internationally permitted (by the United Nations Office on Drugs and Crime ) to cultivate opium poppy for export.**

#### Uses

- Opium is unique in its therapeutic value and is indispensable in the medical world.
- It also finds use in **Homeopathy and Ayurveda or Unani systems** of indigenous medicines.
- The opium which is used as **Analgesics, Anti-Tussive, Anti spasmodic** and as a source of **edible seed-oil**, acts as a **medicinal herb.**

#### 4.11 Interim Appointments for CBI Director



Recently, the **Supreme Court** told the government that **interim appointments to the post of CBI (Central Bureau of Investigation) Director cannot go on.**

- A **petition** was filed in the Court, objecting to the appointment of interim CBI Director following the retirement of the regular CBI director.
- **Arguments of the Petitioner:**
  - The government had failed to appoint a regular Director through the high-power selection committee of the Prime Minister, Chief Justice of India and Leader of Opposition.
  - An interim appointment through an executive order was **not envisaged in the statutory scheme of the 1946 Act (Delhi Special Police Establishment Act of 1946).**
  - Urged the court to direct the introduction of a mechanism to ensure that the **process of selection of CBI Director is completed one or two months in advance** of the retirement of the incumbent.
  - In this context, the petitioner referred to the case of *Anjali Bhardwaj v. Union of India (2019)* – related to **vacancies at Central Information Commission and State Information Commissions.**
  - In this case, the Supreme Court held that “it would be apposite that the process for filling up of a particular vacancy is initiated 1 to 2 months before the date on which the vacancy is likely to occur so that **there is not much time-lag between the occurrence of vacancy and filling up of the said vacancy.**”
- **About the Central Bureau of Investigation (CBI):**
  - The CBI was **set up in 1963** by a resolution of the Ministry of Home Affairs.
    - Now, the CBI comes under the administrative control of the Department of Personnel and Training (DoPT) of the **Ministry of Personnel, Public Grievances and Pensions.**
  - The establishment of the CBI was **recommended by the Santhanam Committee on Prevention of Corruption (1962–1964).**
  - The CBI is **not a statutory body.** It derives its powers from the Delhi



### Special Police Establishment Act, 1946.

- The CBI is the **main investigating agency of the Central Government.**
- It also provides **assistance to the Central Vigilance Commission and Lokpal.**
- It is also the **nodal police agency in India which coordinates investigation on behalf of Interpol Member countries.**
- **Issues in the functioning of CBI:**
  - **Legal Ambiguity:** Lack of clearly demarcated spheres of functioning and overlapping areas of influence severely comprises both the integrity and efficacy of the institution.
    - Under the Delhi Special Police Establishment Act 1946, for conduct or continuance of investigation into offences committed within the territory of a state, **consent of the state is crucial.**
  - **Weak Human Resource:** Massive shortage of officers at the CBI may hamper quality of investigations and increase pendency, a Parliamentary panel said in the year 2020.
    - The panel observed that **789 posts in executive ranks, 77 posts of law officers and 415 posts of technical officers and staff were lying vacant.**
- **Lack of Adequate Investment:**
  - Inadequate investment in personnel, training, equipment or other support structures, adversely hampers professional discharge of duties.
  - High quality research and training are crucial for maintaining an effective modern police force imparting it with the operational ability to meaningfully respond to ever changing societal needs.
- **Accountability:**
  - In the past few decades massive strides have been made in imbibing traits of transparency and accountability into public life and institutions.
  - Of equal importance is the need to maintain morale of the force by

enforcing stringent internal accountability.

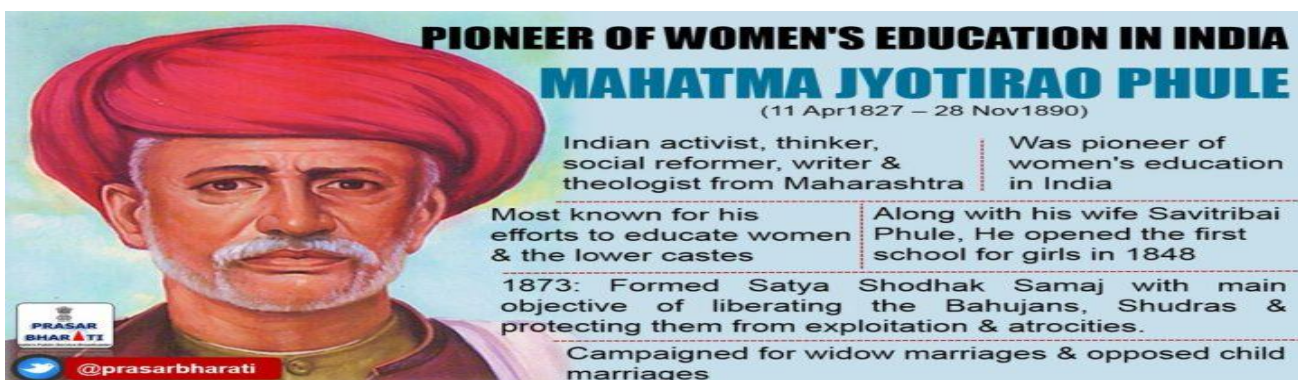
- **Political and Administrative Interference:**

- Given that the superintendence and control of the agency continues to, in large measure, lie with the executive by virtue of Section 4 of the **Delhi Special Police Establishment Act 1946**, the possibility of it being used as a political instrument remains ever present.
- There is a need to ensure that CBI operates under a formal, modern legal framework that has been written for a contemporary investigative agency. A new CBI Act should be promulgated that ensures the autonomy of CBI while at the same time improving the quality of supervision.
- There is a need to administratively protect CBI from political interference. For this to happen, the new Act must specify criminal culpability for government interference.

#### 4.12 Jyotirao Phule ‘Tika Utsav (vaccination festival)’

The ‘**Tika Utsav (vaccination festival)**’, started on the birth anniversary of Mahatma **Jyotirao Phule** (11<sup>th</sup> April) will continue till the birth anniversary of **Babasaheb Ambedkar** on 14<sup>th</sup> April 2021.

- The aim of the four day festival is to vaccinate as many people as possible for the priority groups and zero wastage of **Covid-19** vaccine.
- **Jyotirao Phule** was an **Indian social activist, thinker, anti-caste social reformer and writer from Maharashtra**. He is also known as **Jyotiba Phule**.





- **Brief Profile:**

- **Birth:** Phule was born on **11<sup>th</sup> April, 1827** in present-day Maharashtra and **belonged to the Mali caste of gardeners and vegetable farmers.**
- **Education:** In 1841, Phule was enrolled at the **Scottish Missionary High School (Pune)**, where he completed education.
- **Ideology:** His Ideology was based on: **Liberty; Egalitarianism; Socialism.**
  - Phule was **influenced by Thomas Paine's book titled The Rights of Man** and believed that the only solution to combat the social evils was the **enlightenment of women and members of the lower castes.**
- **Major Publications:** Tritiya Ratna (1855); Powada: Chatrapati Shivajiraje Bhosle Yancha (1869); Gulamgiri (1873), Shetkarayacha Aasud (1881).
- **Related Association:** Phule along with his followers formed **Satyashodhak Samaj in 1873** which meant 'Seekers of Truth' in order to attain equal social and economic benefits for the lower castes in Maharashtra.
- **Municipal Council Member:** He was appointed commissioner to the Poona municipality and served in the position until 1883.
- **Title of Mahatma:** He was bestowed with the title of Mahatma on **11<sup>th</sup> May, 1888 by a Maharashtrian social activist Vithalrao Krishnaji Vandekar.**

- **Social Reformer:**

- In 1848, he taught his wife (**Savitribai**) how to read and write, after which the couple **opened the first indigenously run school for girls** in Pune where they both taught.
  - He was a **believer in gender equality** and he exemplified his beliefs by involving his wife in all his social reform activities.
- By 1852, the **Phules had established three schools** but all of them had shut by 1858 due to the shortage of funds after the Revolt of 1857.
- Jyotiba realised the pathetic conditions of widows and established an



ashram for young widows and eventually became an advocate of the idea of **Widow Remarriage**.

- Jyotirao **attacked the orthodox Brahmins and other upper castes** and termed them as “hypocrites”.
- In 1868, Jyotirao **constructed a common bathing tank** outside his house to exhibit his embracing attitude towards all human beings and wished to dine with everyone, regardless of their caste.
  - He started awareness campaigns that ultimately inspired the likes of Dr. B.R. Ambedkar and **Mahatma Gandhi**, stalwarts who undertook major initiatives against caste discrimination later.
- It is believed by many that **it was Phule who first used the term ‘Dalit’ for the depiction of oppressed masses** often placed outside the ‘varna system’.
- He **worked for abolishment of untouchability and caste system** in Maharashtra.

- **Death:** 28<sup>th</sup> November, 1890. His memorial is built in Phule Wada, Pune, Maharashtra.

#### 4.13 How Punjab govt is trying to involve Arhtiyas in direct payment to farmers?

Recently, the Punjab government has told the central government that it will pay the **Minimum Support Price (MSP) directly into the accounts of farmers** from this procurement season.

- But the Punjab Chief Minister has said that the **State Food Department** has amended the procurement software so that the **Arhtiyas will continue to be involved** even in the direct payment process.

#### Arhtiyas

- The arhtiyas, who are extending critical support to the ongoing farmers’ agitation, are often referred to as **“bichauliya” or middlemen**.
- It is **not a trader holding title** to the grain bought from a farmer.
- He/she **facilitates the transaction between a farmer and actual buyer**, who may



be a private trader, a processor, an exporter, or a government agency.

- In Punjab, there are around **28,000 registered Arhtiyas** and each of them has 20 to 200 farmers associated with them.

### **Involvement of Arhtiyas in direct payment to farmers**

- Earlier, the **farmers' payments used to come in the accounts of the Arhtiyas** who used to give cheques to individuals.
- The modification will include that the **amount will come directly in the accounts of the farmers**, but after the Arhtiyas has clicked a pay now button.
- The Arhtiyas have to click on the **'Pay Now' option within 48 hours**, failing which the amount will be credited directly to the accounts of farmers in 72 hours.

### **Argument of Arhtiyas**

- The Arhtiyas will get a message on the portal that the **amount of a farmer linked with him is ready for transfer** with the modification on the Anaaj Kharid Portal.
- The Arhtiyas will get to **know about the payment of the farmers** and thus get back the advance paid to these farmers.
- They argued that the move will only create **"doubt in the minds of farmers by informing the Arhtiyas before making the payment"**.
- They said that the **modification has no relevance as the farmers and Arhtiyas work on trust** which is old and deep.

### **Reactions of farmers regarding new procurement process**

- The farmer leaders said most of the **Arhtiyas have already got the advance cheques signed from the farmers** when they give money to them on loan.
- The **farmers will also have the bargaining power** if Arhtiyas overcharge because earlier everything was in the hands of the Arhtiyas who used to make payment.
- The farmers are in favour of direct payment but the **timing which the Centre has chosen is not right given the ongoing farmers' protest** which has the support of the Arhtiyas.



#### 4.14 Standoff between Delhi govt and FCI – After Five-Year Gap, FCI Resumes Proper Wheat Procurement at MSP in Delhi

Recently, the apprehensions over **non-provision of minimum support price (MSP)** have been raised by the Delhi government as wheat begins arriving in Delhi's mandis.

##### Arguments of Delhi government

- It has alleged that the **Food Corporation of India (FCI) has not set up any purchasing counters** in the capital to buy wheat on MSP from farmers.
- The Delhi government wants the **FCI to open purchase centres in mandis** where farmers bring their produce.

##### Agricultural area in Delhi

- The Economic Survey of Delhi 2020-21 has estimated that the **gross cropped area has increased** to 43,569 hectares from 36,445 hectares in 2011-12.
- **Agricultural land is mostly spread in villages** in the outer regions of the capital, away from the centre.
- Many villages have been **urbanised over the years**, with the 2011 census finding that around 25 per cent of the total area of Delhi was rural and 75 per cent was urban.
- Out of a total of 357 villages, at least **174 have been declared 'urban' over the last two years** by Lieutenant Governor of Delhi.

##### Farmers' stand on wheat procurement

- The farmers claim that their **purchase is bought below the MSP rate** by traders.
- The farmers also state that they are **unable to sell produce to the FCI** because they do not have the girdawari document.
- The farmers have alleged that **crops have not been purchased on MSP** at Najafgarh and Narela mandis since 2015.

##### Response from Food Corporation of India

- The FCI's Delhi unit said that the **farmers prefer to sell their wheat produce to private traders** instead of bringing it to FCI procurement centres.





- Wheat and dhan (paddy) of Delhi region is generally of good quality and is **bought by traders at or above the MSP.**
- The cutouts and banners have been placed at Najafgarh mandi, and at Narela and Mayapuri depots, **inviting farmers to sell their produce at MSP rates.**

#### **What is girdawari and why has it been discontinued?**

- Girdawari is a **document issued by the revenue department that contains details of the land, its owner, the type of crop grown there and the total production that year.**
- The document is **required by the FCI to verify the identity of farmers** and to remove middlemen and traders from the procurement process.
- The urbanisation of Delhi's villages by **invoking Section 507 of the DMC act** has resulted in farmers not being issued the girdawari document for at least two years.
- The Delhi's two revenue laws which govern the girdawari process i.e. the **Delhi Land Reforms Act, 1954**, and the **Delhi Land Revenue Act, 1954** do not apply to the area after Section 507 is invoked.

#### **4.15 DGFT Trade Facilitation App**

Recently, the Ministry of Commerce & Industry has launched **DGFT 'Trade Facilitation' Mobile App.**

##### **DGFT Trade Facilitation App**

- It provides **easy, omni-channel access to various trade related processes and enquiries** at the touch of button.
  - DGFT is standing up for **businesses as a true leader** with e-issuance of **certificates, QR scan process** to validate documents.
- It will **reduce transaction cost and time for imports and exports** related processes, and usher in transparency.
- The **features** of DGFT Trade Facilitation App are:
  - Real-time trade policy updates, notifications, application status alert, tracking help requests;





- Explore item-wise Export-Import policy & statistics, Track IEC Portfolio;
- AI-based 24\*7 assistance for trade queries;
- DGFT services made accessible to all; and
- Trade Dashboard accessible anytime & anywhere

### Significance of DGFT Trade Facilitation App

- It is launched for **promoting ease of doing business** and **providing quick access to information** to importers/exporters.
- The tech-enabled governance will play a key role in **determining India's growth and competitiveness**.
- It is a single-window approach which has **liberated last-mile beneficiary** from location based constraints, and enhanced ease of doing business.
- It is a symbol of **India's idea of Aatmanirbharta** i.e. making governance easy, economical & accessible.
- It will significantly contribute to **export target of \$1 Trillion by 2025 and GDP target of \$5 Trillion**.

### Directorate General of Foreign Trade (DGFT)

- It is an attached office of the **Ministry of Commerce and Industry**.
- It is headed by **Director General of Foreign Trade**.
- It is responsible for **formulating and implementing the Foreign Trade Policy** with the main objective of promoting India's exports.

### 4.16 Goa's Advanced Antiquities Management System

Recently, the **Directorate of Archives and Archaeology (DAA)** of the Goa government inaugurated the **Advanced Antiquities Management System**.

#### Advanced Antiquities Management System

- It is a **software-driven automated storage** used for the storage of various objects.
- It is the **first such system** in the country for storage of antiquities.



- It has been used for **storage of industrial equipment** but the decision of Goa's DAA to use it for storing valuable antiquities is the first such in the country.
- The **AAMS placed at Goa's DAA in Panaji**, looks like a large, closed container, about 3 metres tall.

### Significance of Advanced Antiquities Management System

- The system that catalogues **83 antiquities at present** is aimed at:
  - **Providing quick information** about an antiquity linked to the software;
  - **Saving storage space**; and
  - **Ensuring improved preservation** of the objects of historical significance.
- It will ensure **safety of antiquities, clean storage space, access control and data management** and also enhance utilisation of space.
- It will provide **access to antiquities in one place with the help of a screen** on which the preserved antiquities can be searched and accessed within the system for viewing.
- It will **provide information** about the age of the antiquity, the material it is made of and its brief history.

### Accessibility of Advanced Antiquities Management System Data

- The system will **mostly benefit researchers and students permitted access** by the Directorate of Archives and Archaeology (DAA) in Goa and officials of the department.
- The students researching **various archaeological subjects often seek access to antiquities** in the care of the Directorate.
- The system will **give the user information about the antiquity immediately** and it can also be updated based on latest information about the antiquity.

### 4.17 President appoints Sushil Chandra as Chief Election Commissioner of India

Recently, the President has appointed **Shri Sushil Chandra**, the senior-most Election



Commissioner, as the **Chief Election Commissioner** in the Election Commission of India.

### Election Commission of India

- The Election Commission is a **permanent and an independent body** established by the **Constitution of India** directly to ensure free and fair elections in the country.
- **Article 324 of the Constitution** provides that the power of superintendence, direction and control of elections to parliament, state legislatures, the office of president of India and the office of vice-president of India shall be vested in the election commission.
- The Election Commission is an **all-India body** in the sense that it is common to both the **Central government and the state governments**.
- The election commission is **not concerned** with the elections to panchayats and municipalities in the states.

### Chief Election Commissioner (CEC)

- The Election Commission shall consist of the **chief election commissioner** and such number of **other election commissioners**, if any, as the president may from time to time fix.
- The **appointment** of the chief election commissioner and other election commissioners shall be made by the **president**.
- The **president may also appoint** after consultation with the election commission such **regional commissioners** as he may consider necessary to assist the election commission.

### Conditions of service and Tenure of Chief Election Commissioner (CEC)

- The **conditions of service and tenure of office** of the election commissioners and the regional commissioners shall be **determined by the president**.
- The CEC and the two other election commissioners have **equal powers and receive equal salary, allowances and other perquisites**, which are similar to those of a **judge of the Supreme Court**.
- They hold office for a term of **six years** or **until they attain the age of 65 years**, whichever is earlier.



- They can **resign at any time** or can also be **removed before the expiry of their term**.

### **Independence of Chief Election Commissioner (CEC)**

- The chief election commissioner is provided with the **security of tenure**.
  - He **cannot be removed from his office** except in same manner and on the same grounds as a **judge of the Supreme Court**.
  - He can be **removed by the president** on the basis of a **resolution passed** to that effect by both the Houses of Parliament with special majority.
  - He **does not hold his office till the pleasure of the president**, though he is appointed by him.
- The service conditions of the chief election commissioner **cannot be varied to his disadvantage after his appointment**.
- Any other election commissioner or a regional commissioner cannot be removed from office **except on the recommendation of the chief election commissioner**.

### **Concerns associated with appointments in Election Commission of India**

- The Constitution has **not prescribed the qualifications** (legal, educational, administrative or judicial) of the members of the Election Commission.
- The Constitution has **not specified the term of the members** of the Election Commission.
- The Constitution has **not debarred the retiring election commissioners** from any further appointment by the government.

### **Powers and Functions of Chief Election Commissioner**

- To determine the **territorial areas of the electoral constituencies** throughout the country on the basis of the **Delimitation Commission Act** of Parliament.
- To **prepare and periodically revise electoral rolls** and to register all eligible voters.
- To **notify the dates and schedules of elections** and to scrutinise nomination papers.

- To **grant recognition to political parties** and allot election symbols to them.
- To **act as a court for settling disputes** related to granting of recognition to political parties and allotment of election symbols to them.
- To **appoint officers for inquiring into disputes** relating to electoral arrangements.
- To **determine the code of conduct** to be observed by the parties and the candidates at the time of elections.
- To **advise the president** on matters relating to the **disqualifications of the members of Parliament.**
- To **advise the governor** on matters relating to the **disqualifications of the members of state legislature.**

#### 4.18 “75” series Pension Awareness

Recently, the Ministry of Personnel, Public Grievances & Pensions has launched “75” series Pension awareness to mark 75 years of India’s independence.

##### “75” series Pension Awareness

- It is a part of the “**Amrut Mahotsav**” to commemorate India @75.
- The other “75” related activities would be the imparting of training on “**Bhavishya**” (**Online Pension Sanction Module**) through 75 offices of the Government of India.
  - The training of Bhavishya will be conducted in multiple sessions across the **Central Government organizations.**
  - The **Central Armed Police Force (CAPF) offices** at different locations across the country will also be covered in this training.
- An online workshop on **Pension Awareness Rules for senior government pensioners and family pensioners** will be held for those above the age of 75 years.
- The Department of Pension and Pensioners Welfare will come out with digital publications of 75 “**Anubhav**” **write-ups**, including those already awarded or selected from the **Anubhav Portal.**

##### Significance of “75” series Pension Awareness

- It would be a **highly innovative and creative method** of observing the 75th year of



India's independence by dedicating it to the cause of pensioners and elder citizens.

- It would personify the real essence of “**Bharat Ka Amrut Mahotsav**” by addressing the elder citizens through one of the youngest mediums of social platform.

#### **Bhavishya (Online Pension Sanction Module)**

- It is an **online Pension Sanction & Payment Tracking System**.
- It provides **online tracking of pension sanction and payment process** by the individual as well as the administrative authorities.
- It keeps **retiring employees informed of the progress of pension sanction process** through SMS/E-Mail.
- Its goal is to ensure payment of **all retirement dues and delivery of Pension Payment Order (PPO)** to retiring employees on the day of retirement itself.

#### **4.19 India Energy Dashboards**

Recently, the vice-chairman of NITI Aayog has launched the **India Energy Dashboards version 2.0**.

- It is an endeavour to **provide single-window access to the energy data** for the country.
- The energy data published/provided by **Central Electricity Authority, Coal**.
- It is an endeavour to **establish a central energy database** of the country.
- It is an initial step towards **building a comprehensive, open, and freely accessible energy data portal** for India.

#### **Key Features of India Energy Dashboards 2.0**

- The IED provides time series data from **FY 2005-06 until FY 2019-20**;
- **Enhanced data download:** It enables easy downloading of data into convenient spreadsheet formats in a cleaner, more intuitive way;
- The IED provides data at **sub-yearly frequencies as well which includes monthly data and API linked data** from some portals maintained by the government

agencies.

- The monthly data is sourced from the monthly reports that are regularly published for the **electricity, petroleum and natural gas sectors**.
- The API linked data from **Saubhagya, UJALA, PRAAPTI, and Vidyut PRAVAH** has been incorporated in the portal.
- A '**Feedback and Suggestions**' forum for the engagement of energy data user community has been incorporated;
- A semi-automated **workflow/ issue-tracking system for managing periodic updates** to the IED.
  - The workflow system performs **basic checks and data validation**, helping to avoid incorrect data entry;
- The **addition of technical and financial data of electricity utilities** available from the regulatory documents in the state of Maharashtra.
  - The **regulatory data specifically for the area served** by the state-owned distribution utility MSEDCL has been added.

### Saubhagya

- The **Pradhan Mantri Sahaj Bijli Har Ghar Yojana 'Saubhagya'** is a new scheme launched in 2017.
- Under Saubhagya free electricity connections to **all households (both APL and poor families) in rural areas and poor families in urban areas** will be provided.
- The Saubhagya web portal has been **designed and developed to disseminate information** about the Household Electrification Status, Household Progress as on date, State Wise Target vs Achieved, Monthly Electrification Progress, etc.

### PRAAPTI Portal

- It stands for **Payment ratification and analysis in power procurement for bringing transparency in invoicing of generators**.
- It is a web portal launched in 2018 by the **Ministry of Power**.
- It will reflect the **invoicing and payment data for many long-term power purchase agreements (PPAs)** from the generators.
- It will also **benefit all the stakeholders** by giving them month-wise data on the





outstanding amounts of DISCOMs against their PPAs.

### Vidyut PRAVAH

- The main features include dashboard for **All India summary**, **link for each states from All India Map** and state specific pages on single click.
- It provides a **wealth of information pertaining to the current demand met**, shortages if any, surplus power available and the prices in the Power Exchange.
- The app will **empower common people to demand 24X7 power from the states** and will take transparency to the next level and make state governments more accountable.

### 4.20 Register of Indigenous Inhabitants of Nagaland (RIIN)

Recently, the **Nagaland government** has convened a crucial consultative meeting with all the tribal bodies and organizations “on the proper modalities and systems to achieve the objective of the **Register of Indigenous Inhabitants of Nagaland (RIIN)**).

#### What is Register of Indigenous Inhabitants of Nagaland (RIIN)?

- It was **constituted in 2019** with an aim of **preventing fake indigenous inhabitants certificates**.
- The RIIN will be the master **list of all indigenous inhabitants of the state**.
- The RIIN list will be based on “**an extensive survey**”.
- It will involve official records of **indigenous residents from rural and (urban) wards** and would be prepared under the supervision of the district administration.

#### Survey for Register of Indigenous Inhabitants of Nagaland (RIIN)

- The designated teams comprising **Sub-Divisional Officers (SDO), Block Development Officers (BDO), Headmasters and other nominated members**, will make a list of indigenous inhabitants in the state.
- The database will **note each family’s original residence, current residence** as well as the **concerned Aadhaar numbers**.

#### Significance of Register of Indigenous Inhabitants of Nagaland (RIIN)



- A list of indigenous inhabitants will be finalised and each person will be given a **unique ID, based on the adjudication and verification.**
- The **final list or the RIIN will be created** and its copies will be placed in all villages and ward.
- All indigenous inhabitants of the state would be issued a **barcoded and numbered Indigenous Inhabitant Certificate.**
- The process will be conducted across Nagaland and will be **done as part of the online system of Inner Line Permit (ILP)**, which is already in force in Nagaland.

#### **Monitoring of Register of Indigenous Inhabitants of Nagaland (RIIN)**

- The entire exercise will be monitored by the **Commissioner of Nagaland.**
- The state government will **designate nodal officers of the rank of a Secretary** to the state government.
  - Their role will be to **monitor the implementation.**
  - They will have **no say in the adjudication process.**
- The nodal officers will **submit monthly reports of their visits and their assessments** to a permanent committee set up under the Home Department to monitor the whole exercise.

#### **Updation of Register of Indigenous Inhabitants of Nagaland (RIIN)**

- Once the RIIN is finalised, **no fresh indigenous inhabitant certificates will be issued** except to newborn babies born to the indigenous inhabitants of Nagaland.

#### **Exclusion from Register of Indigenous Inhabitants of Nagaland (RIIN)**

- In case anyone who is left out of the RIIN, **he/she will need to file an application before Home Commissioner** who will get the matter verified and take necessary action for updating the RIIN if needed.

### **4.21 Jallianwala Bagh Massacre**

Recently, the Prime Minister Shri Narendra Modi has paid tribute to the martyrs of **Jallianwala Bagh massacre.**



- **On April 13**, which was Baisakhi, a **large crowd of people from Amritsar and neighbouring areas gathered** at Jallianwala Bagh for a public meeting in defiance of orders banning public assemblies.
- A furious **General Dyer ordered his troops to fire** into the innocent, unarmed crowd, without even issuing a warning.
- The **ground was surrounded on all sides by high walls** that made escape impossible, and as the soldiers kept shooting.

### Reasons behind Jallianwala Bagh Massacre

- The **Rowlatt Act (Black Act)** was passed on March 10, 1919, authorizing the government to **imprison or confine, without a trial, any person associated with seditious activities**.
- It led to **nationwide unrest** and **Mahatma Gandhi initiated Satyagraha** to protest against the Rowlatt Act.
- On April 7, 1919, **Gandhi published an article called Satyagrahi**, describing ways to oppose the Rowlatt Act.

### Hunter Commission on Jallianwala Bagh Massacre

- On October 14, 1919, the **Disorders Inquiry Committee** was formed to inquire about the massacre.
  - It later came to be known as the **Hunter Commission**.
- The Hunter Commission was **directed to announce their verdict on the justifiability**, or otherwise, of the steps taken by the government.
  - **All the British officials involved in the administration** during the disturbances in Amritsar were interrogated including General Dyer and Mr. Irving.
- The **members** of the Hunter Commission were:
  - **Chairman: Lord William Hunter**, ex- Solicitor-General
  - **W.F. Rice**, Additional Secretary to the Government of India (Home Department)
  - **Justice G.C. Rankin**, Judge of the High Court, Calcutta
  - **Major General Sir George Barrow**, Commandant of the Peshawar



Division

- **Sir Chimanlal Setalvad**
- **Pandit Jagat Narayan**
- **Sardar Sultan Ahmed Khan**

#### 4.22 New Year Festival in States

Recently, the Prime Minister Shri Narendra Modi has greeted people on the occasion of **Bohag Bihu, Vishu, Puthandu, Naba Barsha, Vaisakhadi** and **Maha Bishuba Pana Sankranti**.

##### Bohag Bihu

- The **Assam's Bohag Bihu festival** is a time of celebration marks the beginning of the **Assamese New Year**.
- The word "**Bihu**" is derived from the **Sanskrit word Bishu**, meaning "**to ask blessings and prosperity from the Gods**" before the onset of the harvest season.
- During the Bohag Bihu, Assamese people, dressed in their traditional attire such as **dhoti, gamosa, and saadar mekhela, dance in circles** singing the traditional Bihu Geet.
- It is commonly known **Rongali Bihu**.

##### Vishu

- It is an important **festival celebrated in the state of Kerala**, and by Keralites around the country and the world.
- It marks the **first day of the Malayalam calendar** and, therefore, is celebrated with a lot of festive excitement by Malayalis.
- It signifies **new beginnings, new hopes and aspirations**.
- It is the day when **people pray for their loved ones** and look forward to a new year of health and well-being.
- A special feast called '**sadya**' is customarily prepared in every Malayali household.

##### Puthandu



- Puthandu or Puthuvarusham is celebrated with much **fervour by people in Tamil Nadu.**
- Puthandu is derived from two words i.e. **Puthu meaning 'new' and Andu meaning 'year'.**
- Puthandu is celebrated when the **sun is exactly over the equator.**

### **Naba Barsha**

- Shubho Nabo Barsho or **Pohela Boisakh** marks the **first day of the Bengali lunisolar calendar.**
- It is celebrated as the **Bengali New Year.**
- It marks the **beginning of the financial year for the Bengali business class** and shopkeepers and businessmen worship Lord Ganesha and Goddess Lakshmi.

### **Vaisakhadi**

- Mesadi – Vaisakhadi is a **festival for the harvest season.**
- It is a **colorful festival of rejoicing** and for the harvest.

### **Maha Bishuba Pana Sankranti**

- '**Pana Sankranti**' or '**Maha Bishuba Sankranti**' marks the **Odia New Year.**
- People mark the **advent of the New Year** by drinking pana, a sweet-sour drink made with bael (wood apple), fruits and sugar.

### **4.23 Pilot Project for 100 villages**

Recently, the **Union Ministry of Agriculture & Farmers' Welfare** and **Microsoft India** has inked a Memorandum of Understanding (MoU) for a **pilot project in 100 villages of 6 states.**

- The Prime Minister has laid great emphasis on the **use of modern technologies in farming sector**, so that farmers can get benefitted and enhance their income through it.
- The money of various schemes including **Prime Minister Kisan Samman Nidhi (PM Kisan)** is being deposited directly in the bank accounts of the beneficiaries under the government's idea of transparency.



- The **agricultural economy is the backbone of our country** because it has contributed positively to country's economy even in adverse conditions like Corona epidemic.
- The government is **preparing a farmer database** by linking the land records of farmers across the country.
- The data related to **PM Kisan, Soil Health Card and Pradhan Mantri Crop Insurance Scheme**, available with the government, have been integrated.

### Key Highlights of Pilot Project for 100 villages

- It is a **pilot project in selected 100 villages in 10 districts** of 6 states (**Uttar Pradesh, Madhya Pradesh, Gujarat, Haryana, Rajasthan and Andhra Pradesh**).
- It aims to **develop farmer interface for smart and well-organized agriculture**, including post-harvest management and distribution.
- The **Microsoft** has joined in with its local partner, **CropData** for the implementation of this project.
- The **project is for one year** and both sides inking the MoU will bear the cost on their own.

### Significance of Pilot Project for 100 villages

- The project will **carry out various tasks for the betterment of farmers** in the selected 100 villages, which will enhance their income.
- The project will **reduce the input costs for farmers** and make farming easy.
- It is proposed to **undertake similar pilot projects** with other public and private players to create a vibrant digital agro-ecosystem in the country.

### 4.24 Eatsmart Cities Challenge and Transport 4 All Challenge

Recently, the Union Ministry of Housing & Urban Affairs has launched the '**Eatsmart Cities Challenge**' and '**Transport 4 All Challenge**'.

#### Eatsmart Cities Challenge

- It was organized in association with **Food Safety and Standards Authority of**



### **India (FSSAI) under the aegis of Ministry of Health and Family Welfare.**

- It is envisioned as a **competition among cities to recognize their efforts** in adopting and scaling up various initiatives under Eat Right India.
- In partnership with **Smart Cities Mission**, the Eatsmart Cities Challenge will:
  - Create an environment of **right food practices and habits**;
  - Strengthen the **food safety and regulatory environment**; and
  - Build **awareness among the consumers** and urge them to make better food choices in India's major cities
- The challenge is open to all Smart Cities, capital cities of States /UTs, and cities with a population of more than 5 lakh.

### **Significance of Eatsmart Cities Challenge**

- It will **nudge the urban populace to make the right food choices** and help build a healthier and happier nation.
- It will **complement the remarkable work** being done in the Smart Cities Mission.
- It aims to **motivate Smart Cities to develop a plan** that supports a healthy, safe and sustainable food environment.
- The plans will be **supported by institutional, physical, social, and economic infrastructure** along with the application of 'smart' solutions to combat food related issues.
- It is an **opportunity for India to play a pioneering role** in developing the concept of integrating food systems into city planning and development to provide people with healthy, safe, and nourishing diets.
- It will be a game changer in creating social and behavioural change towards food safety, hygiene and nutrition.

### **Transport 4 All Challenge**

- The **Ministry of Housing and Urban Affairs** launched the Transport 4 All challenge in collaboration with **Institute for Transportation and Development Policy (ITDP)**.
- The **cities and start-ups will receive guidance to develop and test various solutions**, learn from them, and scale them to build people's trust in public transport



and enhance their mobility.

- **All the Smart Cities Mission cities, capitals of states and union territories (UTs), and all cities with a population of over 5 lakh** are eligible for the Challenge.
- The Transport4All through Digital Innovation Challenge comprises three stages:
  - **Stage I PROBLEM IDENTIFICATION:** Cities, with the support of NGOs, identify key recurring problems that citizens and public transport operators face
  - **Stage II SOLUTION GENERATION:** Start-ups develop prototypes of solutions to improve public transport with inputs from cities and NGOs
  - **Stage III PILOT TESTING:** Cities engage start-ups for large-scale pilots and refine the solutions based on citizen feedback

### Significance of Transport 4 All Challenge

- It will support cities to **recover from the mobility crisis** brought by coronavirus pandemic.
- It aims to **develop digital solutions** that will make public transport safe, affordable, comfortable, and reliable for all.
- It will **support the cities and start-ups all over the country** to move towards digital transformation in urban mobility.
- It aims to **bring together cities, citizen groups, and start-ups** to develop solutions that improve public transport to better serve the needs of all citizens.

### 4.25 Simplification of re-issue process for OCI cardholders

Recently, the Centre has stated that the **Overseas Citizen of India (OCI) cardholders** will now be required to get their **document re-issued only once at the age of 20** instead of multiple times needed currently.

- The OCI card has proved to be **very popular among foreigners of Indian origin and spouses of foreign origin of Indian citizens** or OCI cardholders, as it helps them in hassle-free entry and unlimited stay in India.
- According to the extant law, **a foreigner of Indian origin or a foreign spouse of an Indian citizen or foreign spouse of an OCI cardholder**, can be registered as



an OCI cardholder.

- The OCI card is a **life-long visa for entry into and stay in India** with a number of other major benefits attached to it which are not available to other foreigners.

### Key Highlights

- The notification stated that a person who has got **registration as OCI cardholder prior to attaining the age of 20 years** will have to get the **card re-issued only once**.
- The re-issue of OCI card will begin **when a new passport is issued after his or her completing 20 years of age**, so as to capture his or her facial features on attaining adulthood.
- The centre said that if a person has obtained registration as OCI cardholder after attaining the age of 20 years, there will be **no requirement of re-issue of OCI card**.
- Currently, the OCI card is **required to be re-issued each time a new passport is issued up to 20 years of age** and once after completing 50 years of age.
- The Centre said there will be **no restriction on the cardholder to travel to or from India during the period** from the date of issue of new passport till the date of final acknowledgement of documents in the web-based system.

### 4.26 Intellectual Property Appellate Board (IPAB)

Recently, the President of India has signed the **Tribunal Reform (Rationalisation and Conditions of Service) Ordinance 2021**, shutting down **Intellectual Property Appellate Board (IPAB)** and other tribunals for good.

#### What is Intellectual Property Appellate Board (IPAB)?

- It has been constituted by a Gazette notification of the **Central Government in the Ministry of Commerce and Industry** in 2003.
- It was established to **hear appeals against the decisions of the Registrar under the Trade Marks Act, 1999 and the Geographical Indications of Goods (Registration and Protection) Act, 1999**.
- It has its **headquarters at Chennai** and shall have sittings at Chennai, Mumbai,



Delhi, Kolkata and Ahmedabad.

- The Section 83 of the **Trade Marks Act, 1999(Act)**, provides for the **establishment of an Appellate Board** to be known as the Intellectual Property Appellate Board (IPAB).

### **Exclusive Jurisdiction of IPAB**

- The Appellate Board can **receive, hear and dispose all appeals from any order or decision of the Controller** and all cases related to the revocation of a patent, rectification of register, other than through a counter-claim in a suit for infringement.
- IPAB has the authority to proceed with the matter **either de novo or from the stage at which it was transferred on appeal.**
- The IPAB is the **sole authority to exercise the powers and adjudicate proceedings** arising from an appeal against an order or decision of the Controller.

### **Reasons for demise of IPAB**

- It has been **treated like an unwanted child** ever since it was created by the government.
- It always looked for **temporary fix for the problems** in the innovation system because it was **perennially understaffed and underfunded.**
- The formers chairpersons have raised **concerns regarding the judicial and institutional independence** of the IPAB.
- The **IPAB's jurisdiction of cases was split** between trademarks, patents, copyright, and geographical indication, where the predominant business pertained to trademarks.
- The patents bench of the IPAB would have probably taken **longer to constitute** had it not been for the limelight brought by the Novartis case.

### **4.27 Startup India Seed Fund Scheme**

Recently, the **Ministry of Commerce & Industry** launched the **Startup India Seed Fund Scheme (SISFS)**.



### What is Startup India Seed Fund Scheme (SISFS)?

- It was announced by the Hon'ble Prime Minister in January 2021 in his Grand Plenary address of 'Prarambh: Startup India International Summit'.
- Rs. 945 Crore corpus will be divided over the next 4 years for **providing seed funding to eligible startups** through eligible incubators across India.
- It will **Secure seed funding, Inspire innovation, Support transformative ideas, Facilitate implementation, and Start startup revolution (SISFS).**

### Features of Startup India Seed Fund Scheme (SISFS)

- The **online portal** created by DPIIT, for the scheme, will **allow incubators to apply for funds** under it.
- An **Experts Advisory Committee (EAC)** has been created by DPIIT to **execute and monitor the Startup India Seed Fund Scheme.**
  - The grants of upto Rs 5 Crores shall be provided to the **eligible incubators selected by the EAC.**
- The selected incubators shall **provide grants of up to Rs 20 lakhs** for validation of Proof of Concept, or prototype development, or product trials to startups.

### Significance of Startup India Seed Fund Scheme (SISFS)

- It aims to provide **financial assistance to startups** for proof of concept, prototype development, product trials, market entry, and commercialization.
- The scheme is **expected to support** an estimated 3,600 startups through 300 incubators.
- It will **create a robust startup ecosystem**, particularly in Tier 2 and Tier 3 towns of India, which are often deprived of adequate funding.
- It will act as a **bridge between ideas and their implementation.**
- The independent & ambitious thinking in the Startup ecosystem will **encourage entrepreneurship** and create a culture that will recognise innovation.
- It envisions **promoting virtual incubation for startups** by enabling 300 incubators to support startups from all corners of the country.



### Eligibility Conditions for Startups

- A startup, recognized by DPIIT, **incorporated not more than 2 years ago** at the time of application.
- The startup must have a **business idea to develop a product or a service** with a market fit, viable commercialization, and scope of scaling.
- The startup should be **using technology in its core product or service, or business model, or distribution model, or methodology** to solve the problem being targeted.
- Preference would be given to startups **creating innovative solutions in sectors** such as social impact, waste management, water management, financial inclusion, education, agriculture, food processing, biotechnology, healthcare, energy, mobility, defence, space, railways, oil and gas, textiles, etc.
- The Startup **should not have received more than Rs 10 lakh of monetary support** under any other Central or State Government scheme.
- It **does not include prize money** from competitions and grand challenges, subsidized working space, founder monthly allowance, access to labs, or access to prototyping facility.
- **Shareholding by Indian promoters in the startup should be at least 51%** at the time of application to the incubator for the scheme, as per Companies Act, 2013 and SEBI (ICDR) Regulations, 2018.
- A startup applicant can **avail seed support in the form of grant and debt/convertible debentures** each once as per the guidelines of the scheme.

### Eligibility Conditions for Incubators

- The incubator must be a legal entity:
  - A **society** registered under the **Societies Registration Act 1860**, or
  - A **Trust** registered under the **Indian Trusts Act 1882**, or
  - A **Private Limited company** registered under the **Companies Act 1956 or the Companies Act 2013**, or
  - A **statutory body** created through an Act of the legislature
- The incubator should be **operational for at least two years** on the date of



application to the scheme

- The incubator must have **facilities to seat at least 25 individuals**
- The incubator must have at least **5 startups undergoing incubation physically** on the date of application
- The incubator must have a **full-time Chief Executive Officer**, experienced in business development and entrepreneurship, supported by a capable team responsible for mentoring startups in testing and validating ideas, as well as in finance, legal, and human resources functions
- The incubator **should not be disbursing seed fund to incubatees** using funding from any third-party private entity
- The incubator **must have been assisted** by the Central/State Government(s)
- In case the incubator **has not been assisted** by the Central or State Government(s):
  - The incubator must be **operational for at least three years**
  - **Must have at least 10 separate startups undergoing incubation** in the incubator physically on the date of application
  - **Must present audited annual reports** for the last 2 years
- Any **additional criteria** as may be decided by the Experts Advisory Committee (EAC).

#### 4.28 Supreme Court paves way for appointment of ad-hoc judges in HCs

Recently, the Supreme Court has cleared the way for **appointment of retired judges as ad-hoc judges in High Courts under Article 224A** of the Constitution to deal with mounting backlog of cases.

##### Key Highlights

- It is a first step with the hope and aspiration that all concerned would cooperate and **retiring/retired judges would come forth and offer their services** in the larger interest of the judiciary.
- The Indian judiciary is **facing with the ground reality of almost 40% vacancies remaining** in the regular appointments [both permanent and additional judges] over



the last two years.

- The **fulfilment of vacancies remains an unfulfilled challenge** to bring the appointment process to such numbers as would be able to cover the vacancies existing and arising.

### Methodology proposed by Supreme Court for appointment of Ad-hoc Judges in HCs

- The court ruled that the **Chief Justice of a High Court may initiate the process** of recommending a name if:
  - The number of judges' vacancies is more than 20 per cent of the sanctioned strength; or
  - Cases in a particular category are pending for over five years; or
  - More than 10 per cent of pending cases are over five years old; or
  - Percentage of the rate of disposal is lower than the institution of the cases either in a particular subject matter or generally in the court.
- The apex court said that the **Chief Justice should prepare a panel of judges after personal interaction** with the concerned judge to take their consent.
- The court said the appointments can follow the procedure laid down in the **Memorandum of Procedure for appointment of judges**.
- The number of ad-hoc judges in the court should be in the **range of two to five for the time being** depending on the strength of the High Court and the problem faced by it.
- The court ruled that in case there is a **need to constitute a Division Bench to hear a matter**, it would **comprise of only ad-hoc judges** and not a mix of ad-hoc and sitting judges.
  - It also **barred ad-hoc appointees from performing any other legal work** i.e. advisory, arbitration or appearing in court for clients.
- Their **emoluments and allowances should be on a par with a permanent judge** of that court minus the pension and they will be **entitled to allowance/perks/perquisites** as are available to permanent/ additional judge(s).

### Ad-Hoc Judges in High Court

- The **President can appoint duly qualified persons as additional judges of a high**





**court** for a temporary period not exceeding two years when:

- There is a **temporary increase in the business of the high court**; or
- There are **arrears of work** in the high court.
- The President can also appoint a **duly qualified person as an acting judge of a high court** when a judge of that high court (other than the chief justice) is:
  - **Unable to perform the duties** of his office due to absence or any other reason; or
  - **Appointed to act temporarily** as chief justice of that high court
- **Tenure:** An acting judge holds office **until the permanent judge resumes his office**.
  - The Constitution provides that both the **additional or acting judge cannot hold office after attaining the age of 62 years**.

#### **Constitutional Provisions for Ad-Hoc Judges in High Court**

- The SC had asked all **25 high courts to respond to a public interest litigation** filed by Lucknow-based non-profit organisation, Lok Prahari, asking for the appointment of retired judges as ad-hoc judges under Article 128 of the Constitution.
- **Article 128** talks about “**attendance of a retired judge**” as the judge of the Supreme Court.
  - It states that the Chief Justice of India at any time, with the previous consent of the President, may request any person who has held the office of a judge of the Supreme Court or the high court to sit and act as a judge of the Supreme Court.
- **Under Article 224A**, the **retired high court judges** can be appointed as **ad-hoc judges to HCs**.

#### **4.29 Special Task Force (STF) under Article 311**

Recently, the Jammu and Kashmir administration has set up a **Special Task Force (STF)** under **Article 311 of the Constitution**.



### Provision of Article 311 of the Constitution

- The special task force has been passed under provisions of **Article 311(2) (C) of the Constitution.**
  - It gives the administration **power to terminate an employee without constituting an inquiry** against him or her on grounds of security of the State.
- Article 311 provides **two safeguards to civil servants** against any arbitrary dismissal from their posts:
  - A civil servant **cannot be dismissed or removed by an authority subordinate to that** by which he was appointed.
  - A civil servant **cannot be dismissed or removed or reduced in rank except after an inquiry in which he has been informed of the charges against him** and given a reasonable opportunity of being heard in respect of those charges.
- The above two safeguards are **available only to the members of the civil services of the Centre, the all-India services, the civil services of a state** or to persons **holding civil posts** under the Centre or a state.
  - It is **not available to the members** of defence services or persons holding military posts.
- The **second safeguard of holding inquiry is not available** in the following three cases:
  - Where a civil servant is **dismissed or removed or reduced in rank on the ground of conduct** which has led to his conviction on a criminal charge; or
  - Where the **authority empowered to dismiss or remove a civil servant or to reduce him in rank is satisfied** that for some reason (to be recorded in writing), it is not reasonably practicable to hold such inquiry; or
  - Where the **president or the governor is satisfied** that in the interest of the security of the state, it is not expedient to hold such inquiry.

### Purpose of Special Task Force



- The Special Task Force (STF) has been set up to **initiate action against government employees** suspected of activities against “**security of the State**”.
- The sanction is accorded to the constitution of a Special task Force for **identifying and scrutinizing cases of government employees, to initiate the process under Government Order for action** in terms of provisions of Article 311(2) (C) of the Constitution of India.
- The order adds that the terms of reference of the STF would include **compiling records of employees suspected of activities requiring action** under Article 311(2) (C):
  - **To refer them to a committee** constituted by the government;
  - **To engage with other members of the Terror Monitoring Group** for identifying such other employees; and
  - **To take assistance** of other agencies and departments in this regard
- The STF would be headed by the **J&K Additional Director General of Police**.
  - It will include **Inspectors General of Police, Kashmir and Jammu, a representative of Law, Justice and Parliamentary Affairs, and a representative of the department** the employee belongs to.

#### 4.30 Legal status of cryptocurrencies in India

Recently, the **uncertainty over the legal status of cryptocurrencies** is unnerving Indian investors who hold around \$1.5 billion (Rs 10,000 crore) in digital currencies.

- In April 2018, **RBI banned banks and other regulated entities from supporting crypto transactions** after digital currencies were used for frauds.
  - In March 2020, the Supreme Court struck down the ban as **unconstitutional**.
- The government, which plans a law to ban private digital currencies, favours a **digital currency backed by the Reserve Bank of India**.
- The existing investors could get **breathing space to exit their holdings in the event of a ban** on trading, mining and holding cryptos.
- The proposed legal structure may seek **declarations of holdings and transactions**



retrospectively from investors and traders.

### Cryptocurrency Law proposed by RBI

- The **Cryptocurrency and Regulation of Official Digital Currency Bill, 2021** will **prohibit all private cryptocurrencies**.
  - It will lay down the **regulatory framework** for the launch of an “**official digital currency**”.
- A **3-6 month exit period prior to banning** the trading, mining and issuing of cryptos has been discussed in inter-ministerial discussions regarding the law.
  - The high-power inter-ministerial committee has previously **recommended a ban on all private cryptocurrencies**.
- The sources have said that the proposed law **will be prospective**, even though declarations of holdings and transactions may be sought retrospectively.

### Digital Currency of RBI

- The RBI had said central banks are exploring **DLT (Distributed Ledger Technology)** for application in improving financial market infrastructure.
- The RBI is considering **DLT as a potential technological solution** in implementing **central bank digital currency (CBDC)**.
- A recent survey of central banks conducted by the Bank for International Settlements found that some **80 per cent of the 66 responding central banks have started projects to explore the use of CBDC** in some form.
- The RBI had expressed concern over other cryptocurrencies, saying they can be **used for illegal activities, and poses a threat to financial stability**.

### Distributed Ledger Technology (DLT)

- It is a **digital system for recording the transaction of assets** in which the transactions and their details are recorded in multiple places at the same time.
- A distributed ledger is a **database that exists across several locations** or among multiple participants.
- A distributed ledger is **decentralized to eliminate the need for a central authority** or intermediary to process, validate or authenticate transactions.



- The DLT proponents say **digital ledgers can be used in multiple areas**, including government and business dealings, in addition to financial transactions.
- The experts believe that digital ledgers can be used in **tax collection, property deed transfers, social benefits distribution and even voting procedures**.

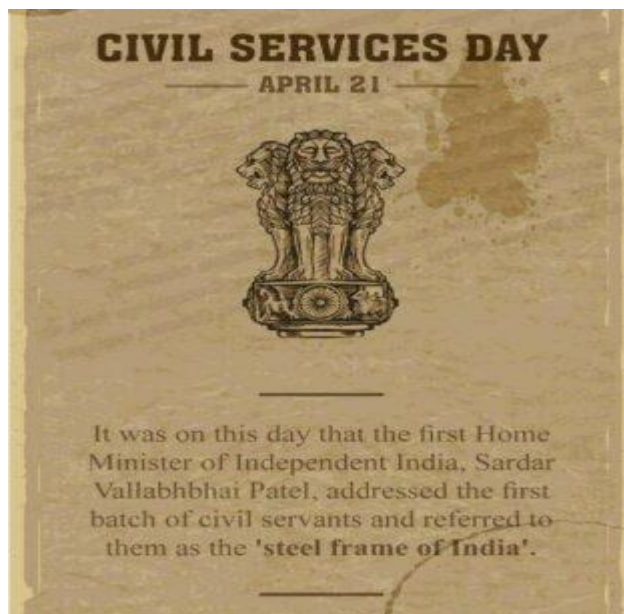
### Central Bank Digital Currency (CBDC)

- The central banks are keen on **designing their own network of digital payments** by officially issuing what is called a **Central Bank Digital Currency (CBDC)** in order to prevent extreme decoupling.
- It is a **legal tender** and **liability of a nation's central bank** in the digital form.
- It is **denominated in a sovereign currency** and **appears on the balance sheet** of a nation's central bank.
- It is a **digital currency** which can be **converted/exchanged at par with similarly denominated cash** and traditional central bank deposits of a nation.
- The novelty of such general-purpose CBDCs lies in its **character of being legal tender**.

### 4.31 Civil Services Day – April 21

Every year, **21<sup>st</sup> April** is celebrated as the **Civil Services Day** by the Government of India.

- It is celebrated as an **occasion for the civil servants** to rededicate themselves to the causes of citizens and renew their commitments to public service and excellence in work.
- The date is chosen to **commemorate the day when the first Home Minister** of Independent India, **Sardar Vallabhbhai Patel addressed the probationers of Administrative Services Officers in 1947** at Metcalf House, Delhi.
  - He referred to civil servants as the '**Steel Frame of India**'.



#### • **Civil Services Day Function:**



- The **first function on civil services day** was held in Vigyan Bhawan, New Delhi in **2006**.
- On this day, the **Prime Minister's Awards for Excellence in Public Administration** are **presented** to Districts/Implementing Units for implementation of Priority programme and innovation categories.

#### **Sardar Vallabhbhai Patel**

- He was born on **31<sup>st</sup> October, 1875** in Nadiad, Gujarat.
  - **National Unity Day** is celebrated every year to **commemorate the birth anniversary of Sardar Vallabhbhai Patel**.
- He was the **first Home Minister and Deputy Prime Minister** of independent India.
- He played an important role in the **integration of many Indian princely states** to make an Indian federation.
- Women of Bardoli bestowed the title '**Sardar**' on Vallabhbhai Patel, which means '**a Chief or a Leader**'.
- He is recognized as the **real unifier of India** for his colossal contribution to integrate and make India a united (Ek Bharat) and an independent nation.



- He requested the people of India to live together by uniting in order to create **Shresth Bharat (Foremost India)**.
  - **Ek Bharat Shreshtha Bharat** was announced by the Prime Minister in 2015 on the occasion of the **140<sup>th</sup> birth anniversary of Sardar Vallabhbhai Patel**.
- He is also remembered as the '**Patron saint of India's civil servants**' as he established the modern all-India services system.
- The **Statue of Unity** at Kevadiya in Narmada district of Gujarat was built in his honour.

#### 4.32 Cybercrime Volunteer Programme

Recently, the **Ministry of Home Affairs (MHA)** has said that it **does not maintain a centralised list of volunteers** enrolled under the cybercrime volunteer programme.

- The Union Ministry of Home Affairs has clarified that **police being a "State subject"** under the Seventh Schedule of the Constitution, does not authorise to maintain a centralised list of cybercrime.
- The **cybercrime grievance portal of MHA** aims to raise a group of "**cybercrime volunteers**" to flag "**unlawful content**" on the Internet.
- The '**police**' and '**public order**' are **State subjects** and States are primarily responsible for the prevention, detection, investigation and prosecution of crimes through their law enforcement agencies (LEAs).

#### Cybercrime Volunteer Programme

- It has been rolled out as a part of **cyber hygiene promotion** to bring together citizens to contribute in the fight against cybercrime in the country.
- It **assists State/UT LEAs** in their endeavour to curb cybercrimes.
- The **volunteers are registered**, and their services utilised, by the respective State/UT LEAs as per their requirement.
- It is a constituent of **National Cybercrime Ecosystem Management Unit** Which is part of the **Indian Cybercrime Coordination Centre (I4C)** scheme.
- It is an initiative aimed at **inviting ordinary citizens to sign up as volunteers** who





would help identify the circulation of digital “unlawful content”.

- Any citizen can register herself under one of three categories: ‘**Cyber Volunteer Unlawful Content Flagger**’, ‘**Cyber Awareness Promoter**’, and ‘**Cyber Expert**’.

### Significance of Cybercrime Volunteer Programme

- The digital rights group, the **Internet Freedom Foundation (IFF)**, has said the programme enables a culture of surveillance.
- It could create **potential social distrust by encouraging civilians to report the online activities** of other citizens.
- It is expected to include **500 volunteers, 200 “cyber awareness promoters” and 50 “cyber experts”**.
- It is supposed to act as a **facilitative tool between ordinary citizens and the government** for the prevention of cybercrime.

### Unlawful Content

- In general, **content that violates any law in force in India** are as follows:



- Against sovereignty and integrity of India
  - Against defence of India
  - Against Security of the State
  - Against friendly relations with foreign States
  - Content aimed at disturbing Public Order
  - Disturbing communal harmony
  - Child Sex Abuse material
- A separate section “**Report Child/Women related crime**” has been provided on the portal under Child Sex Abuse material, where one can report such content.
  - The Cybercrime Volunteers are advised to **study Article 19** of the Indian Constitution.

### 4.33 Power Grid Infrastructure Investment Trust (PGInvIT)

Recently, the **Power Grid Corporation of India (PGCIL)** has launched its **infrastructure**



**investment trust (InvIT) called Power Grid Infrastructure Investment Trust (PGInvIT).**

### **Power Grid Infrastructure Investment Trust (PGInvIT)**

- It is the **first infrastructure investment trust (InvIT)** to be launched by a **public sector company**.
- It has **offered a price band** of Rs 99-100 per unit for the public issue.
- The InvIT will raise **Rs 4993 crore as fresh issuance** and **PGCIL is also providing an offer for sale (OFS)** of Rs 2742 crore of existing units.
- It **owns, construct, operate, maintain and invest** in power transmission assets in India.
- It is **registered with Securities and Exchange Board of India (SEBI)** as an InvIT.
- The Units of POWERGRID InvIT are proposed to be listed on **BSE Limited (BSE) and National Stock Exchange of India Limited (NSE)**.
- It will be the **third InvIT** after **IRB InvIT and India Grid Trust** to be listed in India.

### **Significance of Power Grid Infrastructure Investment Trust (PGInvIT)**

- The net proceeds will be used to provide loans to the initial portfolio assets for repayment or pre-payment of their debt.
- The government has allowed Power Grid to monetise its other TBCB subsidiaries through the InvIT route, which are under construction or will be acquired by it in the future.”
- It would help PGCIL to **monetise in the first lot**, assets with gross block value of more than Rs 7,000 crore.
- The proceeds from the **asset monetisation would be deployed by PGCIL** in their new and under-construction projects.

### **Power Grid Corporation of India (PGCIL)**

- It is a **“Maharatna”** Central Public Sector Enterprise.
- It is the **largest power transmission company** in India.
- It is **engaged in project planning, designing, financing, constructing, operating,**



and maintaining power transmission projects across India.

#### 4.34 Resignation by Judges in the High Court

Recently, the President Ram Nath Kovind accepted the **resignation tendered by Justice Sharad Kumar Gupta** from the office of Judge, **Chhattisgarh High Court**.

#### Appointment of Judges of High Court

- The judges of a high court are **appointed by the President**.
- The **chief justice of high court is appointed by the President** after consultation with the **chief justice of India and the governor of the state concerned**.
- The **chief justice of the concerned high court is also consulted** for appointment of other judges in High Court.
- In case of a common high court for two or more states, the **governors of all the states concerned are consulted** by the president.
- In the **Second Judges case (1993)**, the Supreme Court ruled that no appointment of a judge of the high court can be made, unless it is in conformity with the opinion of the chief justice of India.
- In the **Third Judges case (1998)**, the Supreme Court opined that in case of the appointment of high court judges, the chief justice of India should consult a collegium of two senior-most judges of the Supreme Court.

#### Tenure of Judges of High Court

- The Constitution has **not fixed the tenure of a judge of a high court** but it makes the following four provisions in this regard:
  - He holds office until he **attains the age of 62 years**.
    - Any questions regarding his age is to be **decided by the president after consultation with the chief justice of India** and the decision of the president is final.
  - He can **resign his office** by writing to the president.
  - He can be **removed from his office by the President** on the recommendation of the Parliament.



- He **vacates his office when he is appointed as a judge of the Supreme Court** or when he is transferred to another high court.

### Removal of Judges of High Court

- A judge of a high court can be removed from his office by an order of the **President**.
- The President can issue the **removal order only after an address by the Parliament has been presented to him** in the same session for such removal.
- The address must be **supported by a special majority** of each House of Parliament.
  - The special majority is a **majority of the total membership of that House and majority of not less than two-thirds of the members of that House present and voting**.
- The grounds of removal are two i.e. **proved misbehaviour or incapacity** which implies that a judge of a high court can be removed in the same manner and on the same grounds as a judge of the Supreme Court.

### Procedure for removal of judge of High Court

- The **Judges Enquiry Act (1968)** regulates the procedure relating to the removal of a judge of a high court by the process of impeachment:
  - A removal motion signed by **100 members (in the case of Lok Sabha) or 50 members (in the case of Rajya Sabha)** is to be given to the Speaker/Chairman.
  - The **Speaker/Chairman** may admit the motion or refuse to admit it.
  - If it is admitted, then the Speaker/Chairman is to **constitute a three member committee** to investigate into the charges.
  - The committee should consist of the **chief justice or a judge of the Supreme Court, a chief justice of a high court, and a distinguished jurist**.
  - If the committee finds the judge to be **guilty of misbehaviour or suffering from an incapacity**, the House can take up the consideration of the motion.



- After the motion is **passed by each House of Parliament by special majority**, an address is presented to the president for removal of the judge.
- The president passes an **order removing the judge**.

## POLITICAL ISSUES, HUMAN RIGHTS AND GOVERNANCE

### 5.1 Article 244 (A), its relevance for Assam hill tribes, and the politics

The **demand for an autonomous state within Assam** has been raised by some of the sections of the society in Assam under the provisions of **Article 244A of the Constitution**.

- **Genesis:**

- In the **1950s**, a **demand for a separate hill state** arose around certain sections of the **tribal population of undivided Assam**.
- After prolonged agitations, **Meghalaya gained statehood in 1972**.
- The leaders of the **Karbi Anglong and North Cachar Hills** were also part of this movement. They were given the **option to stay in Assam or join Meghalaya**.
- They **stayed back** as the centre promised them more powers, including **Article 244 (A)**.
- In the 1980s, the demand for more power/autonomy took the form of a movement with a number of Karbi groups resorting to violence.
  - It soon became an **armed separatist insurgency** demanding full statehood.

- **Article 244A:**

- **Article 244(A) allows for creation of an 'autonomous state'** within Assam in certain tribal areas.
- It also envisages **creation of a local legislature or Council of Ministers or both** to carry out local administration.
- It was Inserted into the Constitution by the **Twenty-second Constitution Amendment Act, 1969**.
- **Article 244(A) accounts for more autonomous powers to tribal areas**



**than the Sixth Schedule.** Among these the most important power is the control over law and order.

- In Autonomous Councils under the Sixth Schedule, they do not have jurisdiction of law and order.

### 6th Schedule

- The Sixth Schedule of the Constitution provides for the **administration of tribal areas in Assam, Meghalaya, Tripura and Mizoram** to safeguard the rights of the tribal population in these states.
  - This special provision is provided under **Article 244 (2) and Article 275 (1) of the Constitution.**
- In **Assam**, the hill districts of **Dima Hasao, Karbi Anglong and West Karbi and the Bodo Territorial Region** are under this provision.
- The **Governor is empowered to increase or decrease the areas** or change the names of the autonomous districts. While executive powers of the Union extend in Scheduled areas with respect to their administration in fifth schedule, the sixth schedule areas remain within executive authority of the state.
  - The **Fifth Schedule** of the Constitution deals with the **administration and control of scheduled areas and scheduled tribes** in any state except the four states of Assam, Meghalaya, Tripura and Mizoram.
    - The whole of the normal administrative machinery operating in a state do not extend to the scheduled areas.
    - At present, **10 States** namely Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan and Telangana have Fifth Schedule Area.
    - Tribal habitations in the states of Kerala, Tamil Nadu, Karnataka, West Bengal, Uttar Pradesh and Jammu & Kashmir have not been brought under the Fifth or Sixth Schedule.
- The **acts of Parliament or the state legislature do not apply** to autonomous districts and autonomous regions or apply with specified modifications and exceptions.
- The Councils have also been endowed with wide **civil and criminal judicial**



**powers**, for example establishing village courts etc. However, the jurisdiction of these councils is subject to the jurisdiction of the concerned High Court.

## 5.2 Sankalp se Siddhi

Recently, the **Ministry of Tribal Affairs** has launched the ‘Sankalp se Siddhi’.

### Sankalp se Siddhi

- It is an initiative of **Tribal Cooperative Marketing Development Federation Ltd (TRIFED)**, Ministry of Tribal Affairs.
- It is a **Village and Digital Connect Drive**.
- It is a **100 day drive which will entail 150 teams** (10 in each region from TRIFED and State Implementation Agencies/Mentoring Agencies/Partners) visiting ten villages each.
- The **100 villages in each region and 1500 villages in the country** will be covered in the next 100 days.
- The primary objective Sankalp se Siddhi is to **activate the Van Dhan Vikas Kendras** in these villages.
- It is expected that Sankalp Se Siddhi will aid in **effecting a complete transformation of the tribal ecosystem** across the country.

## 5.3 Haryana Assembly amended rules for conduct of business

Recently, Haryana has amended several provisions under its **Rules of Procedure and Conduct of Business** in the Legislative Assembly of the state.

### New Rules in the amended provisions

- **In Rule 76**, a new provision has been added, according to which during every sitting of the House, **presence of at least two ministers is a must**.
  - It was **not maintained at times** during discussion on certain Calling Attention Motions or other Business of the House.
- A new provision has been added, according to which the members “**shall not tear**





off documents in the House in protest” in order to maintain decorum of the House.

- The Sub-Rule 46(11) that deals with **Questions asked by the Members** during the sitting of the House has been substituted.
  - The new Sub-Rule states that the **question shall not contain more than 150 words** in any case either typed or handwritten on one side of the page.
  - It has been done to have **better clarity for the Ministers to give a specific reply** to the query raised by the Member.
- A new provision has been added regarding **Supplementary Questions** which states that a supplementary question shall be held out of order by the Speaker if, in his opinion:
  - It does not arise from the main Question or its answer;
  - Instead of seeking information, it gives information;
  - It seeks confirmation or denial of an opinion; and
  - It infringes any of the rules regarding question.

### **New definition for Leader of the Opposition**

- The new rules define Leader of Opposition as:
  - Leader of a Legislative Party having the **largest number of members other than the party/parties** that has formed the government;
  - The parties having the **strength at least equal to the strength of the quorum** of the House and recognised as such by the Speaker.
    - It is subject to that if **more than one party has got equal number of members competing for recognition**, the number of votes polled to the which has polled more number of votes in the Assembly elections, shall be recognised as the official opposition and its leader as the Leader of the Opposition.
  - It provided further that if the **total number of votes polled to both the groups equal**, then the Office of the Leader of the Opposition shall be held alternatively and the order in which they will hold Office shall be decided by draw of lots.



### Amended Rule for protocol violation enquiry

- The **Rule 297-A** has been added by the amended provisions which states that:
  - Any **violation of the Instructions of the State Government and Instructions issued by the Department of Personnel Training, Central Government adopted by the State or any direction of the Speaker** issued from time to time on observance of protocol and courtesies in dealing with the Members of the House shall be taken up by the Committee of Privileges for examination and Report.

### Amended Rules pertaining to Ministers

- The **Rule 204 (1)** deals with members of the Committee of the Assembly.
  - It says that the **members of a Committee of the Assembly shall be appointed by the Assembly** on a motion made, or nominated by the Speaker, as the case may be.
- **A provision has been added** under this Rule, which reads that:
  - Provided that a **Minister shall not be nominated as a member of the Committee except Business Advisory Committee** and in case a member of the Committee is appointed as a Minister, he/she shall cease to be the member of the Committee from the date of such appointment.

### 5.4 Mukhya Mantri Chiranjeevi Swasthya Bima Yojana (MMCSBY)

Recently, the **Rajasthan government** has launched the registration process for its ambitious **Mukhya Mantri Chiranjeevi Swasthya Bima Yojana (MMCSBY)**.

#### Mukhya Mantri Chiranjeevi Swasthya Bima Yojana (MMCSBY)

- It is the **flagship scheme** for providing **universal health coverage** in the state.
- Under the scheme, **each family in the state is entitled to health insurance cover of Rs 5 lakh every year** in all government hospitals and select private facilities.
- It is a **cashless treatment for all** which is aimed at providing **medical relief to all residents of Rajasthan**.
- It covers **1,576 packages and procedures for treatment of various diseases**,



and **expenses for medical consultation, tests, medicine** five days before admission and 15 days after discharge.

- Under the scheme, the state will provide **health coverage up to Rs 50,000 for common ailments** and up to **Rs 5 lakh for more serious diseases**.
- It is a part of '**Rajasthan Model of Public Health**' (RMPH), under which a **Right to Health Bill** will be brought.
- The applicants who will be applying for Health Insurance under Rajasthan Government have to **pay only 850 Rupees annually** and after that they can avail the benefits.
- The eligibility under the scheme is **NFSA Card Holder, SECC 2011 Registered Family, All Department Samvida Worker, Small Farmers and All other Family**.
- The beneficiaries will be able to get **cashless treatment** from community health centres, district hospitals, satellite hospitals, hospitals attached to medical colleges, hospitals run by Centre such as AIIMS, railway hospitals and private hospitals empaneled with the health insurance scheme.

### 5.5 National Security Act (NSA)

Recently, a close scrutiny of the orders by District Magistrates invoking the **National Security Act** shows why the draconian law is so readily invoked.

- **In 1818, Bengal Regulation III** was enacted to empower the British government to arrest anyone for maintenance of public order without giving the person recourse to judicial proceedings.
- **In 1919, the Rowlatt Act** allowed confinement without a trial.
  - The **Jallianwalla Bagh tragedy** was a direct result of the protest against these Rowlatt Act.
- Post-independence, Indira Gandhi introduced the controversial **Maintenance of Internal Security Act (MISA) in 1971**, which was similar to the Rowlatt Act.
  - It was **repealed in 1977**, and eventually the **National Security Act (NSA) 1980** was promulgated.



### National Security Act (NSA)

- The former **Prime Minister Indira Gandhi** brought the National Security Act in 1980.
- The **maximum period of detention** under National Security Act is:
  - A person can be detained for up to **12 months without a charge**.
  - A person can be held for **10 days without being told the charges against them**.
  - The person can **appeal before a high court advisory board** but will **not be allowed a lawyer during the trial**.

### National Security Act (NSA) matter because

- **Article 22 (1) of the Indian Constitution** says an arrested person cannot be denied the right to consult, and to be defended by, a legal practitioner of his choice.
- According to **Section 50 of the Criminal Procedure Code (CrPC)**, any person arrested has to be informed of the grounds of arrest and has the right to bail.
- Under National Security Act, **none of these rights are available** to the person detained.
- The **government holds the right to conceal information** which it considers to be against public interest to disclose.
- The **National Crime Records Bureau (NCRB)**, which collects crime data in India, **does not include cases under the NSA** as no FIRs are registered.

### Provisions under National Security Act (NSA)

- The NSA empowers the **state to detain a person without a formal charge and without trial**.
- Under the NSA, a **person is taken into custody to prevent him or her from acting in any manner** prejudicial to “the security of the state” or for “maintenance of the public order”.
- It is an **administrative order** passed either by the **Divisional Commissioner or the District Magistrate**.
- It is **not a detention ordered by police** based on specific allegations or for a



specific violation of the law.

- The **DM can slap NSA against a person even if he is in police custody or if a person has been granted bail by a trial court.**
  - If the person has been **acquitted by the court**, the same person can be **detained under the NSA.**

### **Implications of National Security Act (NSA) on the accused**

- The law takes away an **individual's constitutional right to be produced before the magistrate within 24 hours** as is the case when the accused is in police custody.
- The detained person **does not have the right to move a bail application** before a criminal court.
- The DM who passed the detention order is **protected under the Act as no prosecution or any legal proceeding can be initiated** against the official who carried out the orders.

### **Rights of accused under National Security Act (NSA)**

- The writ of **Habeas Corpus is the only protection guaranteed under the Constitution** against the unchecked state power of taking people into custody under the NSA.
- The higher judiciary has held that the **preventive detention under NSA has to be strictly construed** keeping in view the “delicate balance between social security and citizen freedom”.
- The Supreme Court has held that to **prevent “misuse of this potentially dangerous power, the law of preventive detention has to be strictly construed”** and “**meticulous compliance with the procedural safeguards**” has to be ensured.
- **Under Article 22(5)**, all the detained persons have the **right to make an effective representation** before an independent advisory board.
  - The **board consists of three members** and is chaired by a member who is, or has been, a **judge of a High Court.**

### **5.6 Disqualification of MLAs**

Recently, the Goa Assembly Speaker has agreed to pass orders on a **Congress leader's petition seeking disqualification of 10 party MLAs** who had joined the opposition in July 2019.

### Constitutional Provisions for Disqualification of MLAs

- Under the Constitution, **a person shall be disqualified** for being chosen as and for being a member of the legislative assembly or legislative council of a state:
  - If he **holds any office of profit** under the Union or state government (except that of a minister or any other office exempted by state legislature),
  - If he is of **unsound mind and stands so declared by a court,**
  - If he is an **undischarged insolvent,**
  - If he is **not a citizen of India or has voluntarily acquired the citizenship of a foreign state** or is under any acknowledgement of allegiance to a foreign state, and
  - If he is so **disqualified under any law** made by Parliament.

### Parliamentary Provisions for Disqualification of MLAs

- The **Parliament** has prescribed a number of additional disqualifications in the **Representation of People Act (1951)** and the same is followed by Legislative Assembly and Council:
  - He must **not have been found guilty of certain election offences or corrupt practices** in the elections.
  - He must **not have been convicted for any offence resulting in imprisonment for two or more years.**
    - But, the detention of a person under a **preventive detention law is not a disqualification.**
  - He must **not have failed to lodge an account of his election expenses** within the time.
  - He must **not have any interest in government contracts, works or services.**
  - He must **not be a director or managing agent nor hold an office of**



**profit** in a corporation in which the government has at least 25 per cent share.

- He must **not have been dismissed from government service** for corruption or disloyalty to the state.
- He must **not have been convicted for promoting enmity between different groups** or for the offence of bribery.
- He must **not have been punished for preaching and practicing social crimes** such as untouchability, dowry and sati.
- The **governor's decision is final** on the question whether a member has become subject to any of the above disqualifications.
  - The governor should **obtain the opinion of the Election Commission** and act accordingly.

### Disqualification on Ground of Defection

- The Constitution lays down that a person shall be disqualified for being a member of either House of state legislature if he is so disqualified on the **ground of defection** under the provisions of the **Tenth Schedule**.
- The question of disqualification under the Tenth Schedule is decided by the **Chairman, in the case of legislative council** and, **Speaker, in the case of legislative assembly**.
- In 1992, the Supreme Court ruled that the **decision of Chairman/Speaker** in this regard is **subject to judicial review**.

### 5.7 Lab on Wheels Programme

Recently, the Education Minister of Delhi has launched the '**Lab on Wheels**' Programme.

- It is an initiative of **Delhi Technological University**.
- It will have **students of the university** travelling in a bus across Delhi to **teach government school students and underprivileged children**.
- It will comprise 16 computers, two televisions, one 3D printer, one laptop, cameras and one printer.





- It will be **Wi-Fi enabled**, with 100 per cent power back up and fully air-conditioned.
- **“Under the ‘Extension and Field Outreach Programme’**, the DTU students will be helping 44 lakh government school students to find their own path, to think, implore and realise their dreams.

#### What is the idea behind Lab on Wheels?

- The idea is to **impart education in the fields of Mathematics and Science** to those students who come from marginalised and poor economic backgrounds.
  - It aims to **pique their interests in these subjects** while pursuing higher education.
- It is hoped that it becomes mutually beneficial, if some of these **students decide to take admission in DTU** once they finish schooling.

#### Coverage of Lab on Wheels programme

- The programme will **initially target 12 schools**.
- The **bus will function in three shifts of three hours** each from 8 am to 11 am, 11 am to 2 pm and 2 pm to 5 pm.
- **Each shift will have two volunteers (DTU students)** teaching 16 students if it's a computer lab, or 25 students if it's regular classroom teaching.

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### 5.8 Anamaya

Recently, the Ministry of Health and Family Welfare and Ministry of Tribal Affairs has launched **‘Anamaya’**.

- The **Tribal TB Initiative** was launched by both the Ministries to fulfil the Prime Minister's goal of **‘TB MuktBharat’ by 2025**, five years ahead of the global deadline.
- The Union Minister exalted the Prime Minister's grand vision of a New India to celebrate **75 years of our independence** and spoke how **upliftment of tribal societies continues to be a crucial fulcrum** to the whole exercise.
- The tribal population disproportionately shares the **burden of poverty, death and**



**diseases** compared to their non-tribal counterparts and face a myriad of obstacles when accessing public health systems.

- It includes the **lack of health facilities** in indigenous communities and cultural differences with the health care providers.

### Anamaya

- It is a **Tribal Health Collaborative**.
- It is a **multi-stakeholder initiative** supported by **Piramal Foundation** and **Bill and Melinda Gates Foundation (BMGF)**.
- The Ministry will undertake **several activities** as part of this Collaborative such as:
  - Establishment of a **Health Cell** to closely monitor healthcare delivery in the tribal areas; and
  - Devising mechanisms to implement the **Tribal Health Action Plan**
- It will begin its operations with **50 tribal, aspirational districts (with more than 20 per cent ST population)** across six high tribal population states.
- It will be **extended to 177 tribal districts** over the next 10 years.

### Significance of Anamaya

- It will **converge efforts of various Government agencies and organisations** to enhance the health and nutrition status of the tribal communities of India.
- It **envisions building a sustainable, high-performing health ecosystem** to improve health of our tribal population.
- It will bring together **governments, philanthropists, national and international foundations, NGOs** to end “all preventable deaths” among the tribal communities of India.
- It aims to build a **sustainable, high-performing health eco-system** to address the key health challenges faced by the tribal population of the country.

### 5.9 Shaphari: Certification scheme to encourage good aquaculture practices

Recently, the **Marine Products Exports Development Authority (MPEDA)** has developed

a certification scheme for aquaculture products called ‘Shaphari’.

- Shaphari is based on the **United Nations’ Food and Agriculture Organization’s** technical guidelines on aquaculture certification.
  - **Shaphari** is a Sanskrit word that means **superior quality of fishery products suitable for human consumption.**
- It is a market-based tool for hatcheries to **adopt good aquaculture practices** and help **produce quality antibiotic-free shrimp products** to assure global consumers.
- **Components and Process:**
  - **Two Components:**
    - **Certifying hatcheries** for the quality of their seeds.
      - Those who successfully clear multiple audits of their operations shall be granted a **certificate for a period of two years.**
    - **Approving shrimp farms** that adopt the requisite good practices.
  - **Process:**
    - The entire **certification process will be online** to minimise human errors and ensure higher credibility and transparency.
- **Significance:**
  - The certification of hatcheries will **help farmers easily identify good quality seed producers.**
  - Certified aquaculture products will **help exporters to export their consignments to markets under stringent food safety regulations** without the fear of getting rejected.
  - It will **bolster confidence in India’s frozen shrimp produce**, the country’s biggest seafood export item.
- **India’s Shrimp Exports:**
  - **About:**
    - India exported frozen shrimp worth almost **USD 5 billion in**

**2019-20**, with the **US and China** its biggest buyers.

- Frozen shrimp is **India's largest exported seafood item**. It constituted 50.58% in quantity and 73.2% in terms of total USD earnings from the sector during 2019-20.
- **Andhra Pradesh, West Bengal, Odisha, Gujarat and Tamil Nadu are India's major shrimp producing States**, and around 95% of the cultured shrimp produce is exported.
- **Concern:**
  - **Container shortages** and incidents of **seafood consignments being rejected** because of food safety concerns.
  - Consignments sourced from Indian shrimp farms have been **rejected due to the presence of antibiotic residue** and this is a matter of concern for exporters.
- **Other Initiative for Food Safety of Exported Products:**
  - **National Residue Control Programme:**
    - National Residue Control Plan (NRCP) is a **statutory requirement for export to European Union countries**.
    - It is **regulated and carried by MPEDA**, under NRCP, **definite sampling schedule and sampling strategies are drawn every year** for monitoring the residues of substances like Antibacterial/Veterinary Medicinal Products and environmental contaminants.
    - **Samples are collected from hatcheries, feed mills, aquaculture farms and processing plants**, located in maritime states and **tested for the presence of any residue/contaminant**.

### **Marine Products Exports Development Authority**

- MPEDA is a **nodal coordinating, state-owned agency** engaged in fishery production and allied activities.
- It was **established in 1972** under the **Marine Products Export Development Authority Act (MPEDA), 1972**.
- It functions under the **Union Ministry of Commerce and Industry**.



- It is **headquartered** in Kochi, Kerala.
- Its mandate is to **increase exports of seafood** including fisheries of all kinds, **specifying standards, marketing, processing, extension and training** in various aspects.

### 5.10 NanoSniffer

Recently, the Union Minister of Education has launched '**NanoSniffer**'.

- It is the **world's first** Microsensor based Explosive Trace Detector (ETD).
- It is developed by **NanoSniff Technologies** which is an **IIT Bombay incubated startup**.
- It is a **100% Made in India product** in terms of research, development & manufacturing.
- It gives **visible & audible alerts** with sunlight-readable color display.

#### Significance of NanoSniffer

- It will **reduce India's dependency** on imported explosive trace detector devices.
- It will **encourage other institutions, startups and medium-scale industries** to research & develop products indigenously.
- It is a step towards Prime Minister's vision of a **self-reliant India**.
- It can **detect explosives in less than 10 seconds** and it also identifies and **categorizes explosives** into different classes.
- It **detects all classes** of military, conventional and homemade explosives.
- It provides **trace detection of nano-gram quantity** of explosives & delivers result in seconds.

### 5.11 India's stance on 'refugees' and 'illegal immigrants'

Recently, the Supreme Court has appeared to accept the Centre's contention that the **Rohingya people in India are illegal immigrants** when it refused to order the release of 300 members of the community.



### Illegal immigrant v/s refugee

- Under the **1951 UN Convention on the Status of Refugees** and the subsequent **1967 Protocol**, the word refugee pertains to:
  - Any person who is **outside their country of origin and unable or unwilling to return** owing to well-founded fear of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion.
- The stateless persons may also be refugees in this sense, where **country of origin (citizenship) is understood as 'country of former habitual residence'**.
- The Indian government had allowed the UN High Commissioner for Refugees (UNHCR) to carry out **verification and provide some of them with identity cards**.
- In the Supreme Court, the Solicitor General of India has referred to them as **illegal immigrants**.
  - The **combination of refugees with public and political rhetoric** about terrorism and communal slurs, there is a demand that they be **"deported"** immediately.

### India and UN Convention on Refugees

- India has welcomed refugees in the past, and on date, **nearly 300,000 people here are categorised as refugees**.
- India is **not a signatory** to the 1951 UN Convention or the 1967 Protocol.
- India **does not have** a refugee policy or a refugee law of its own.
  - It has allowed India to **keep its options open on the question of refugees**.
- The Indian government can **declare any set of refugees as illegal immigrants** and decide to deal with them as trespassers under the **Foreigners Act or the Indian Passport Act**.

### 5.12 e-SANTA Web Portal

Recently, the Ministry of Commerce & Industry has virtually inaugurated **e-SANTA Web**



## Portal.

### e-SANTA Web Portal

- It is an **electronic marketplace** providing a platform to **connect aqua farmers and the buyers**.
- The term e-SANTA was coined for the web portal, meaning **Electronic Solution for Augmenting NaCSA farmers' Trade in Aquaculture**.
  - **National Centre for Sustainable Aquaculture (NaCSA)** is an extension arm of Marine Products Export Development Authority (MPEDA).
- It is a **Digital Bridge to end the market divide** and will act as an alternative **marketing tool between farmers & buyers** by eliminating middlemen.
- The e-SANTA platform is **available in many languages**, which will help the local population.
- It is a **completely paperless and end-to-end electronic trade platform** between Farmers and exporters.
- The platform provides **detailed specification of each product listing** and it is backed by an end to end electronic payment system with **NaCSA as an Escrow agent**.

### Importance of e-SANTA Web Portal

- It will enable the **farmers to get a better price** and the **exporters to directly purchase quality products from the farmers** enhancing traceability.
- It will **raise income, lifestyle, self-reliance, quality levels, traceability, and provide new options** for our aqua farmers.
- It will **change the traditional way of carrying out business** from a word of mouth basis to become more formalised & legally binding.
- The e-SANTA will **RAISE the lives & income** of farmers by:
  - Reducing Risk
  - Awareness of Products & Markets
  - Increase in Income





- Shielding Against Wrong Practice
- Ease of Processes
- It will revolutionize traditional aquafarming by providing **cashless, contactless and paperless electronic trade platform** between farmers and exporters.

### Need for e-SANTA Portal

- The farmers are facing **monopoly and exploitation**.
- The exporters are **facing inconsistency and quality gaps** in the products purchased.
- The **traceability** is a big issue in international trade.

### 5.13 MANAS Platform

Recently, the **Principal Scientific Adviser** to the Government of India has virtually launched the **MANAS Platform**.

#### MANAS Platform

- The MANAS platform stands for **Mental Health and Normalcy Augmentation System**.
  - It was endorsed as a national program by the **Prime Minister's Science, Technology, and Innovation Advisory Council (PM-STIAC)**.
- It is a **comprehensive, scalable, and national digital wellbeing platform** and an app developed to augment mental well-being of Indian citizens.
- It was initiated by the **Office of the Principal Scientific Adviser** to the Government of India.
- It is a joint venture by **Pune-based Armed Forces Medical College (AFMC)** and **National Institute of Mental Health and Neuro-Sciences (NIMHANS), Bengaluru**.
- The application has been **developed** by the Bengaluru centre of the **Centre for Development of Advanced Computing (CDAC)**.
- It is based on **life skills and core psychological process**, with universal accessibility, delivering age-appropriate methods and promoting positive attitude



focusing on wellness.

- The current version has **identified two age groups** i.e. **ages 15 to 20**, termed as **Mann-Marg**, and **ages 20 to 35**, termed as **YoungISTAN**.

### **Significance of MANAS Platform**

- It is a mobile application to **promote wellbeing across age groups**.
- It **integrates the health and wellness efforts** of various government ministries, scientifically validated indigenous tools with gamified interfaces developed/researched.
- The app must be **integrated with the public health schemes** like the National Health Mission, Poshan Abhiyan, e-Sanjeevani and others so that it is used widely.
- MANAS as an initiative is **intended to build a healthier and happier community**, to empower it to nurture its innate potential for building a Swasth and Aatmanirbhar Bharat.

### **5.14 Online Grievance Management Portal for Scheduled Castes (SCs)**

Recently, the Union Minister for Communication & IT and Law & Justice has launched the “**Online Grievance Management Portal of National Commission for Scheduled Castes (NCSC)**”.

#### **Key Features of Online Grievance Management Portal for Scheduled Castes (SCs)**

- It is designed in collaboration with the **Bhaskaracharya Institute for Space Applications and Geoinformatics (BISAG-N)**.
- It is aimed at **submission of complaints about atrocities against citizens** who belong to the Scheduled Castes.
- It will facilitate an **end-to-end e-filing of complaints and grievances** and their tracking.
- It is intended to make the **hearing process work on similar lines as e-courts**.
- The portal is **linked to the Commission’s website** and one can file one’s complaint upon registering on it.
- It will be available in **English and Hindi**, though documents can be **uploaded in multiple languages, and different file types**.



### Significance of Online Grievance Management Portal for Scheduled Castes (SCs)

- It would make it **easier for Scheduled Castes population** of our country to **register their complaint** from any part of the country.
- It shall enable SC population to file their **application and other atrocity and services related grievances online** and to get them addressed in a **time bound manner**.
- The NCSC aims to **streamline the grievance redressal** specially of the Scheduled Caste population through this portal.

### Need for Online Grievance Management Portal for Scheduled Castes (SCs)

- The Ministry of Social Justice & Empowerment is **committed for the empowerment and transformation of weaker and deprived sections** of our society.
- The complaints for atrocities against citizens who belong to scheduled castes had to be **filed by hand so far**.

### National Commission for Scheduled Castes (NCSC)

- It is a **constitutional body** under **article 338** appointed by the President.
- It has been established with a view to **provide safeguards against the exploitation of Scheduled Caste**.
- It shall be the duty of the commission to **investigate and monitor all matters relating to the safeguards** provided for the Scheduled Castes under this Constitution.
- It renews its commitment to **serve the cause of the SC community** as mandated in the Constitution and policies of the government.

### 5.15 National Startup Advisory Council

Recently, the Union Minister of Commerce & Industry has chaired the first meeting of the **National Startup Advisory Council**.

### National Startup Advisory Council



- It was constituted by the **Department for Promotion of Industry and Internal Trade (DPIIT)** in January 2020.
- The **chairman** of the NSAC is **Union Minister of Commerce & Industry**.
- The **ex-officio members** of the NSAC are nominees of the concerned Ministries/ Departments/ Organisations not below the rank of Joint Secretary.
- The council has a **number of non-official members**, representing various stakeholders such as founders of successful startups, veterans who have grown and scaled companies in India.
- The **term of the non-official members will be two years** and they will advise the government on measures needed to build a strong ecosystem for startups.

#### **Purpose of National Startup Advisory Council**

- It is constituted to **advise the Government on measures needed to build a strong ecosystem** for nurturing innovation and startups in the country.
- The council shall act as the **guiding light for many budding startup entrepreneurs** in India.
- India is **hub of innovation & out-of-the-box thinking** and it has the potential to become World's largest and most innovative startup ecosystem.

#### **Importance of National Startup Advisory Council**

- It aims to **drive sustainable economic growth** and **generate large scale employment opportunities**.
- It will help **India reach a stage**, where countries around the **world would look to model their own startup ecosystems based on India's achievements** and will take 'StartUp India' to the Global Stage.
- It aims to **foster a culture of innovation amongst citizens and students**, promote innovation, and promote creation, protection and commercialization of intellectual property rights.

#### **5.16 DuroKea Series Product**

Recently, the Union Minister of Education has virtually launched the **DuroKea Series**



## Product.

### DuroKea Series Product

- It is the **world 1st affordable and long-lasting hygiene product.**
- It is developed by the researchers of **IIT Hyderabad.**
- It is an innovative **long-lasting technology to combat COVID-19 virus** spreading.
- The next generation DuroKea antimicrobial technology starts at Rs. 189, **kills 99.99% of germs instantly and leaves behind the long-lasting protective nanoscale coating** up to 35 days till next wash.
- **DuroKea S, DuroKea M, DuroKea H, and DuroKea H Aqua** using innovative “DuroKea Technology”, is an adhesive Nano formulation.

### Significance of DuroKea Series Product

- The unique property of DuroKea range is to **ensure instant killing (within 60 sec) and prolonged protection** which is an immense necessity during the pandemic.
- The **revolutionary antimicrobial property of DuroKea products** has been tested and certified by Indian Government accredited lab and field-tested at the IIT Hyderabad campus.

## 5.17 SVAMITVA Scheme

Recently, the Prime Minister Shri Narendra Modi has launched the distribution of **e-property cards** under the **SWAMITVA scheme.**

### Key Highlights

- The SVAMITVA scheme has been implemented to **benefit the population in rural areas** and with the possession of e-property cards, they will now have a **written document regarding their land ownership.**
- Nearly **4.09 lakh property owners will be given their e-property cards** on the occasion of National Panchayati Raj Day.
- The distribution of e-property cards will mark the **rolling out of the SVAMITVA**



scheme for implementation across the country.

### SVAMITVA Scheme

- It is a **Central Sector Scheme** launched by Hon'ble Prime Minister of India on National Panchayat Day i.e. 24th April 2020.
- SVAMITVA stands for **Survey of Villages and Mapping with Improved Technology in Village Areas**.
- Its nodal ministry is **Ministry of Panchayati Raj (MoPR)**.
  - In the States, the **Revenue Department / Land Records Department** will be the Nodal Department and shall carry out the scheme with support of **State Panchayati Raj Department**.
- The **Survey of India** shall work as the technology partner for implementation.
- The **pilot phase of the scheme** was implemented during 2020-2021 in the states of **Maharashtra, Karnataka, Haryana, Uttar Pradesh, Uttarakhand, Madhya Pradesh** and **select villages of Punjab and Rajasthan**.

### Purpose of SVAMITVA Scheme

- It aims to provide an **integrated property validation solution** for rural India.
- The demarcation of rural abadi areas would be done using **Drone Surveying technology** which provides the '**record of rights**' to **village household owners** possessing houses in inhabited rural areas in villages.
- It would enable them to use their **property as a financial asset** for taking loans and other financial benefits from Bank.
- The scheme has the **potential to transform rural India using modern technical tools** of mapping and surveying.
- The scheme will cover around **6.62 lakh villages** of the **entire country during 2021-2025**.

### Objectives of SVAMITVA Scheme

- The scheme seeks to achieve the following **objectives:-**
  - To bring **financial stability to the citizens in rural India** by enabling them to use their property as a financial asset for taking loans and other



financial benefits.

- Creation of **accurate land records** for rural planning.
- **Determination of property tax**, which would accrue to the GPs directly in States where it is devolved or else, add to the State exchequer.
- Creation of **survey infrastructure and GIS maps** that can be leveraged by any department for their use.
- To support in preparation of **better-quality Gram Panchayat Development Plan (GPDP)** by making use of GIS maps.
- To **reduce property related disputes** and legal cases

### National Panchayat Day

- It is observed on **24th April every year** because the **73rd Constitutional Amendment Act, 1992** came into force from **24 April 1993**.
- The most significant aspect of this day is the **diversification of political power** in the hands of common men.
- The **National Panchayati Raj day** is observed in the country since **24 April 2010**.
- The Ministry of Panchayati Raj **commemorates the following awards** to the Panchayats on the occasion of National Panchayat Day:
  - **Nanaji Deshmukh Rashtriya Gaurav Gram Sabha Puraskar (NDRGGSP)** to Gram Panchayats for outstanding performance of Gram Sabha.
  - **Deen Dayal Upadhyay Panchayat Sashaktikaran Puraskar (DDUPSP)** in General and Thematic categories for all three levels of Panchayats.
  - **Child-friendly Gram Panchayat Award**
  - **Gram Panchayat Development Plan (GPDP) Award:** To be conferred upon three best performing Gram Panchayats across the country.

### 5.18 Assam Swanirbhar Nari Atmanirbhar Scheme

Recently, the **Chief Minister of Assam** has launched the “**Swanirbhar Nari: Atmanirbhar Asom**” scheme.



### Assam Swanirbhar Nari Atmanirbhar Scheme

- It aims to create more than **3.72 lakh sustainable individual and 822 community assets** benefiting around 4 lakh families.
  - In the case of individual asset creation, **5 identified activities would be implemented** across all Development Blocks.
  - For community asset creation, **20 activities would be implemented** in selected Development Blocks.
- It would be **implemented under MGNREGA** with the convergence of schemes of various state departments and missions.
  - It includes Assam State Rural Livelihood Mission, Agriculture & Horticulture, Fishery, Environment & Forest, Handloom and Textiles, Sericulture, Veterinary, and Animal Husbandry, etc.
- The **Panchayati Raj Institution (PRI) representatives** will be giving full cooperation to the women of the self-help groups in the region of Assam so that the scheme can flow very easily.
- **Eligibility:** The applicant must be a **permanent resident of Assam**.

### Significance of Assam Swanirbhar Nari Atmanirbhar Scheme

- It aims to **empower the economically downtrodden women** of the state.
- The implementation of the scheme by the Assam government will definitely **help the women to hold their head high**.
- The main objective of the scheme is to **empower those women who belong to the financially disadvantaged category**.
- It will provide **employment opportunities to the women** so that they can earn their living and improve their standard of living.

### 5.19 Sunidhi Project

Recently, the Government of India has launched ‘**Sunidhi**’ project.

- It is an **ambitious information technology** project called **Superior New-generation Information and Data Handling Initiative (SUNIDHI)**.



- It aims to **digitise all provident funds and pension related activities** of the Coal Mines Provident Fund Organisation (CMPFO).
- It is an effort to make the **system related to funds and pensions more robust.**
- It is running from its **data centre at Hyderabad** in sync with the **Disaster Recovery Centre at Bhubaneswar.**

### Coal Mines Provident Fund Organisation (CMPFO)

- It is a **statutory body** under the Ministry of Coal.
- It was **established in 1948 through an Act of Parliament** to administer different schemes of provident fund, pension and deposit linked insurance for coal mine workers.
- It **administers** the following Schemes:-
  - Coal Mines Provident Fund Scheme
  - Coal Mines Family Pension Scheme (merged with Pension Scheme in 1998)
  - Coal Mines Pension Scheme
  - Coal Mines Deposit Linked Insurance Scheme

### Objectives of CMPFO

- Making CMPFO one of the **best social security organization internationally** by providing online settlement of PF , pension and other claims for the members, online status information about their claims and real time online grievance redressal,
- Maintaining **highest level of security** in investments made,
- Creating **smooth systems for processing** of claims and disbursements,
- Providing a **transparent, people-friendly and responsive administration** for the benefit of employees and pensioners,
- Protecting **interest of the employees Vis-a- Vis their employers** and enforcing the Act and Schemes with firmness, fairness and fearlessness,
- Introducing the most **advanced tools of information technology** to facilitate and improve performance, monitoring and compliance.



## SCIENCE AND TECHNOLOGY

### 6.1 Novel technique for tracking solar eruptions

Recently, the scientists have developed a new technique for tracking solar eruptions that disrupt space weather to be used in **India's first solar mission 'Aditya L-1'**.

- A software named **Computer Aided CME Tracking Software (CACTus)** based on a computer vision algorithm was used to **detect and characterise such eruptions automatically in the outer corona.**
- It **could not be applied to the inner corona observations** due to the vast acceleration experienced by these eruptions.
- It **limited the capability to track the eruptions** as CMEs accelerate in the lower corona.
- It is a new technique to **track the huge bubbles of gas threaded with magnetic field lines** that are ejected from the Sun.
- The huge bubbles **disrupt the space weather and causing geomagnetic storms, satellite failures, and power outages.**
- The ejections from the Sun are technically called as **Coronal Mass Ejections (CMEs).**

#### **CMEs Identification in Inner Solar Corona (CIISCO)**

- It is an algorithm developed by **Aryabhata Research Institute of observational sciences (ARIES)** along with their collaborators from **Royal Observatory of Belgium.**
- It aims to **detect and track the accelerating solar eruption in the lower corona.**
- It has been **successfully tested on several eruptions** observed by space observatories, including Solar Dynamics Observatory and Solar-Terrestrial Relations Observatory.
- The parameters determined by CIISCO are useful to **characterise the eruption in the lower corona.**
  - The Lower Corona is a region where the **properties of such eruptions are less known.**
- The **implementation of CIISCO on the Aditya-L1 data** will provide new insight



into the CME properties in this less explored region.

### Aditya L-1 Mission

- It is the **first Indian mission** to study the Sun.
- It was conceived as a **400kg class satellite carrying one payload**, the **Visible Emission Line Coronagraph (VELC)** and was planned to launch in an 800 km low earth orbit.
- The Aditya-1 mission has now been revised to “**Aditya-L1 mission**” and will be inserted in a halo orbit around the L1, which is **1.5 million km from the Earth**.
- Aditya-1 was **meant to observe only the solar corona**.
  - The **outer layers of the Sun**, extending to thousands of km above the **disc (photosphere) is termed as the corona**.
- Aditya-L1 with additional experiments can now provide **observations of Sun's Corona (soft and hard X-ray, Emission lines in the visible and NIR), Chromosphere (UV) and photosphere (broadband filters)**.
- The **particle payloads** will study the **particle flux emanating from the Sun and reaching the L1 orbit**, and the magnetometer payload will measure the variation in magnetic field strength at the halo orbit around L1.
- The complete list of payloads, their science objective and lead institute for developing the payload is provided below:
  - **Visible Emission Line Coronagraph (VELC):** To study the diagnostic parameters of solar corona and dynamics and origin of Coronal Mass Ejections (3 visible and 1 Infra-Red channels); magnetic field measurement of solar corona down to tens of Gauss.
  - **Solar Ultraviolet Imaging Telescope (SUIT):** To image the spatially resolved Solar Photosphere and Chromosphere in near Ultraviolet (200-400 nm) and measure solar irradiance variations.
  - **Aditya Solar wind Particle Experiment (ASPEX):** To study the variation of solar wind properties as well as its distribution and spectral characteristics.
  - **Plasma Analyser Package for Aditya (PAPA):** To understand the composition of solar wind and its energy distribution.



- **Solar Low Energy X-ray Spectrometer (SoLEXS):** To monitor the X-ray flares for studying the heating mechanism of the solar corona.
- **High Energy L1 Orbiting X-ray Spectrometer (HEL1OS):** To observe the dynamic events in the solar corona and provide an estimate of the energy used to accelerate the particles during the eruptive events.
- **Magnetometer:** To measure the magnitude and nature of the Interplanetary Magnetic Field.

### Lagrangian points

- Lagrangian points are the locations in space where the **combined gravitational pull of two large masses** roughly balance each other.
- Any small mass placed at that location will **remain at constant distances** relative to the large masses.
- There are five such points in Sun-Earth system and they are denoted as **L1, L2, L3, L4 and L5**.
- A halo orbit is a **periodic three-dimensional orbit** near the L1, L2 or L3.

### 6.2 Chaff Rocket

Recently, the **Defence Research & Development Organization (DRDO)** has developed three indigenous variants of 'chaff rockets'.

#### New Variants of Chaff Rockets

- The DRDO's facility **Defence Laboratory Jodhpur (DLJ)** has indigenously developed **three variants** of chaff rocket technology:
  - Short Range Chaff Rocket (SRCR);
  - Medium Range Chaff Rocket (MRCR); and
  - Long Range Chaff Rocket (LRCR)
- The chaff system basically comprises of a **multiple barrel launchers (Port and Starboard configuration)**, with each launcher possessing a built-in stabilization system against roll, pitch and yaw motions.



### Chaff Rocket

- It is primarily a mechanism that when fired **acts as a decoy to deflect the guiding mechanism** of enemy missiles.
- It is developed for the **protection of naval ships** from guided-missile attacks.
- It is a **passive expendable electronic countermeasure technology** used worldwide to protect naval ships from enemy's radar and radio frequency missile seekers.
- The chaff rockets **deployed in the air reflect as multiple targets for the missile guidance systems** and deflecting adversary missiles, thus protecting own assets.
- Chaff forms a **volumetric radar reflecting material** and is composed of distributed metalized radar reflector material.

### 6.3 Wolf–Rayet stars or WR stars

Recently, the Indian astronomers have tracked a **rare supernova explosion** and traced it to one of the hottest kinds of stars called **'Wolf-Rayet' or WR stars**.

#### Key Highlights

- The long-term monitoring of these transients opens the door to **understand the nature of the exploding star** as well as the explosion properties.
- **Supernovae (SNe)** are highly energetic explosions in the universe releasing an enormous amount of energy.
- A team of astronomers from the Aryabhata Research Institute of Observational Sciences (ARIES) have conducted **optical monitoring of one such stripped-envelope supernova called SN 2015dj** hosted in the galaxy NGC 7371.

#### Wolf–Rayet stars or WR stars

- The massive stars which are at an **advanced stage of stellar evolution** and **losing mass at a very high rate** are known as Wolf-Rayet stars.
- The rare Wolf–Rayet stars are **highly luminous objects**, a thousand times more than the Sun and have intrigued astronomers for long.
- They are **massive stars and strip their outer hydrogen envelope** which is



associated with the fusion of Helium and other elements in the massive core.

- The spectra of WN stars are **dominated by helium and nitrogen emission lines**, but can contain some carbon, while WC stars show no nitrogen and are dominated by helium, carbon and oxygen emission lines.
- It is estimated that about **50% of Wolf-Rayet stars** occur in binary systems.
- The Wolf- Rayet stars are thought to end their lives spectacularly as either a **Type Ib or Type Ic supernova explosion**.
- The Wolf-Rayet (WR) phenomenon involves **classical WRs, very massive stars (VMS), WR central stars of planetary nebula CSPN [WRs], and supernovae (SNe)**.

#### 6.4 Classical Swine Fever (CSF) and Sheep Pox

Recently, the ICAR-Indian Veterinary Research Institute has transferred the 'Technology – CSF & Sheep Pox Vaccines' to M/s Hester Biosciences through Agrinnovate India Limited.

##### Classical Swine Fever (CSF)

- It is an important **disease of pigs** that causes 100% mortality.
- It is also known as **hog cholera**.
- It is a **contagious viral disease** of domestic and wild swine.
- It is caused by a **virus of the genus Pestivirus of the family Flaviviridae**, which is closely related to the viruses that cause bovine viral diarrhoea in cattle and border disease in sheep.
- The **humans are not affected by this virus** and swines are the only species known to be susceptible.

##### Transmission of Classical Swine Fever (CSF)

- The most common method of transmission is through **direct contact between healthy swine and those infected with CSF virus**.
- The virus is shed in **saliva, nasal secretions, urine, and feces**.
- CSF virus can **survive in pork and processed pork products** for months when





meat is refrigerated and for years when it is frozen.

### Treatment of Classical Swine Fever

- In India, the disease is controlled by a **lapinized CSF vaccine** (Weybridge Strain, U.K.) produced by killing large numbers of rabbits.
- The ICAR-IVRI has developed a **Cell Culture CSF Vaccine** using the **Lapinized Vaccine Virus from foreign strain** in order to avoid killing of rabbits.
- The **Indigenous CSF Cell Culture Vaccine (IVRI-CSF-BS)** developed by using an Indian field isolates has a huge export potential.
- The Vaccine can produce a **large number of doses (60 Lakhs approx.)** easily from only one **75 cm<sup>2</sup> Tissue Culture Flask** due to its very high titre.

### Sheep Pox

- It is is a **severe viral disease in sheep** which is economically important in small ruminants.
- It is a **serious and often fatal disease** characterized by widespread skin eruption.
- It is a **highly contagious disease of sheep** caused by a poxvirus different from the benign orf (or contagious ecthyma).

### Transmission of Sheep Pox

- The **transmission is usually by aerosol after close contact** with severely affected animals containing ulcerated papules on the mucous membranes.

### Treatment of Sheep Pox

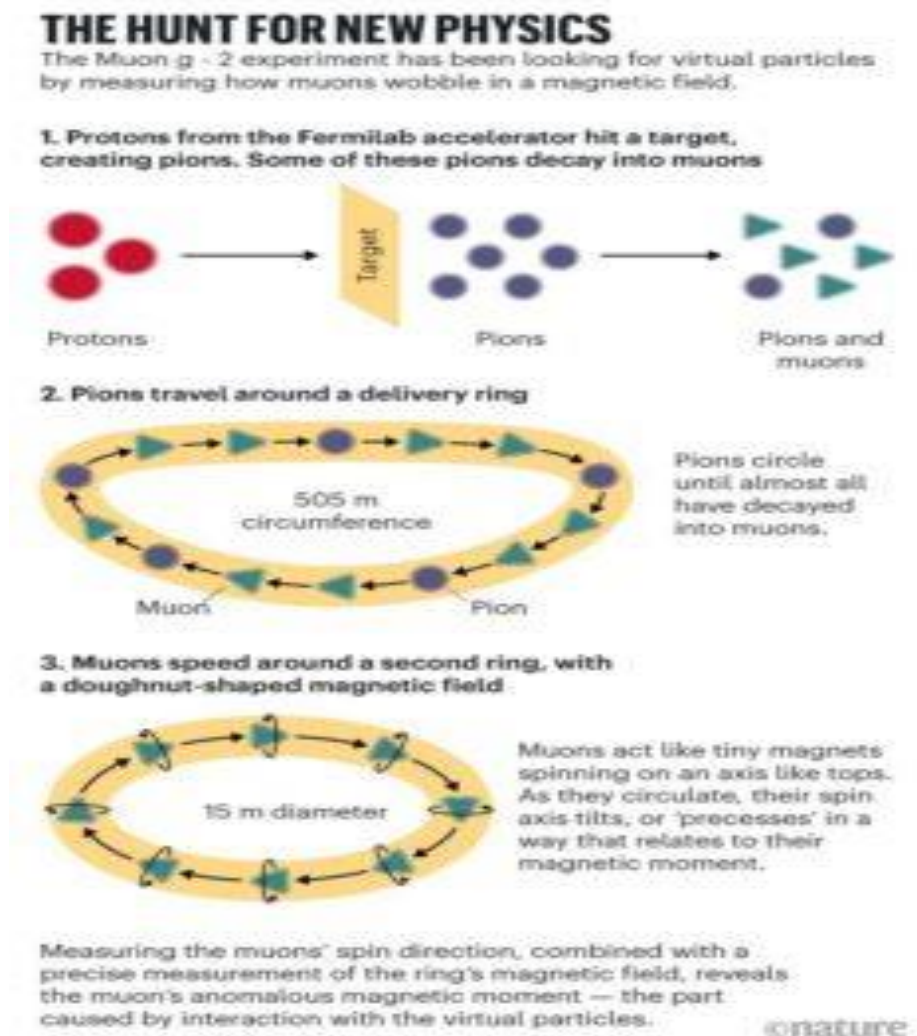
- The **live attenuated Sheep Pox Vaccine** using indigenous strain was developed by the Institute for preventive vaccination in the sheep population.
- The developed Vaccine uses **indigenous Sheep Pox Virus Strain [SPPV Srin 38/00]** and is adapted to grow in the Vero cell line which makes the Vaccine production to be easily scalable.
- It has been **evaluated both in-house and field** as it protects the Vaccinated animals for a period of 40 months.

## 6.5 Muon $g-2$ vs Standard Model

Recently, the newly published results of an international experiment hint at the **possibility of new physics governing** the laws of nature.

- The results of the experiment, which studied a **subatomic particle called the Muon**, do not match the predictions of the Standard Model.

The experiment, called **Muon  $g-2$  (g minus two)**, was conducted at the US Department of Energy's Fermi National Accelerator Laboratory (Fermilab).



### What is Standard Model?

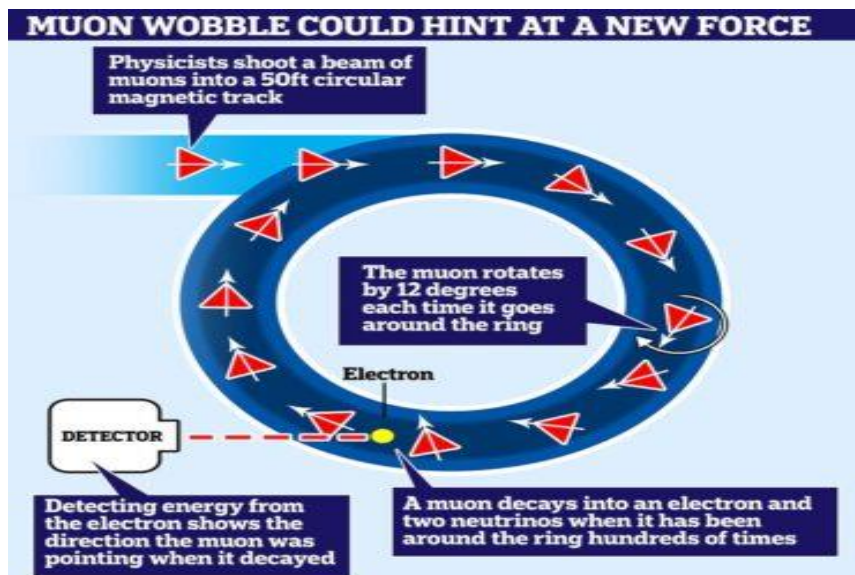
- It is a **rigorous theory** that predicts the **behaviour of the building blocks of the**

universe.

- It lays out the rules for **six types of quarks, six leptons, the Higgs boson, three fundamental forces**, and **how the subatomic particles behave** under the influence of electromagnetic forces.

### What is Muon?

- The Muon is one of the **leptons**.
- It is **similar to the electron**, but **200 times larger**, and **much more unstable**, surviving for a fraction of a second.



### Key Highlights of Muon g-2 experiment

- It measured a **quantity relating to the Muon**, following up a previous experiment at Brookhaven National Laboratory.
  - The Brookhaven experiment, concluded in 2001, came up with results that **did not identically match predictions by the Standard Model**.
- The Muon g-2 experiment measured this **quantity with greater accuracy**.
  - It sought to find out whether the **discrepancy would persist, or whether the new results would be closer** to predictions.

### Factor measured during Muon g-2 experiment

- It is called the **g-factor**, a measure that derives from the **magnetic properties of**

**the muon.**

- The scientists study the **effect it leaves behind on its surroundings** because the muon is unstable.
- In a strong magnetic field, the **direction of this magnet “wobbles”** just like the axis of a spinning top.
- The **rate at which the muon wobbles is described by the g-factor** whose value is known to be close to 2, so scientists measure the deviation from 2.

### 6.6 What makes India’s double mutant COVID variant, B.1.617 so concerning?

The ‘**double mutant**’ virus that is having a bearing on the spread of the pandemic in India, has been formally classified as **B.1.617**.

- **Mutation** is an alteration in the genetic material (the genome) of a cell of a living organism or of a virus that is more or less permanent and that can be transmitted to the cell’s or the virus’s descendants.
- **Double Mutant (B.1.617):**
  - Earlier Genome sequencing of a section of virus samples by the **Indian SARS-CoV-2 Consortium on Genomics (INSACOG)**, revealed the presence of two mutations, **E484Q and L452R**.
    - Though these mutations have individually been found in several countries, the **presence of both these mutations together** have been first found in coronavirus genomes from India.
      - This double mutant from India has been scientifically named as **B.1.167**. However, it is yet to be classified as ‘**Variant of Concern**’.
      - Till now only three global ‘Variants of Concern’ have been identified: the **U.K. variant (B.1.1.7)**, the **South African (B.1.351)** and the **Brazilian (P.1) lineage**.
  - **Spread of B.1.617:** According to the INSACOG, sequencing a sample of genomes from coronavirus patients in India, **B.1.617 was first detected in India** in December, 2020.
    - Today, nearly **70% of the genome sequences** with the

mutations **characterising B.1.617 are from India.**

- This is followed by the **United Kingdom (23%), Singapore (2%) and Australia (1%).**

### Variant of Concern

- These are variants for which there is evidence of an increase in transmissibility, more severe disease (increased hospitalizations or deaths), significant reduction in neutralization by antibodies generated during previous infection or vaccination, reduced effectiveness of treatments or vaccines, or diagnostic detection failures.

- **Issues Associated with Mutants:**

- Mutant virus is **associated with large spikes** of Covid-19 cases in some countries.

Ra • It enables **viruses to become more infectious** as well as **evade antibodies.**

• It has also been associated with a **reduction in vaccine efficacy.** International studies have shown reduced efficacy of vaccines particularly those by Pfizer, Moderna and Novavax to certain variants.

• However, the vaccines continue to be significantly protective in spite of this.


## T Cell

White Blood Cell

**Function:** T cells recognize antigens—substances that prompt an immune response—that the body has encountered before. However, unlike another immune cell called a B cell, T cells do not make antibodies, or proteins that correspond to specific antigens and help fight infection. Instead, some T cells help B cells make antibodies and others directly kill an infected cell or a cancerous cell. T cells also help prevent the immune response from attacking normal host cells inappropriately.

**Disease:** A person with an insufficient number of T cells, such as a person who has developed AIDS from an uncontrolled HIV infection, may be more prone to infections and certain cancers.

**Location:** T cells originate in the bone marrow and become specialized in the thymus, a small organ just under the breastplate. They then recirculate between the bloodstream and the lymphatic system and also patrol the tissues. T cells are also called T lymphocytes.



- **Another Mutation:**

- According to INSACOG, there is also a **third significant mutation,**

**P614R** other than the two mutations (E484Q and L452R).

- All three concerning **mutations are on the spike protein**. The spike protein is the part of the virus that it uses to penetrate human cells.
  - Virus' spike protein may increase the risks and allow the virus to escape the immune system.
- **Resistant to T cells:**
  - **L452R** could even make the coronavirus resistant to T cells, that is the class of cells necessary to target and destroy virus-infected cells.
    - T cells are different from antibodies that are useful in blocking coronavirus particles and preventing it from proliferating

### T Cells

- A type of white blood cell that is of **key importance to the immune system** and is at **the core of adaptive immunity**.
- It creates the body's immune response to specific pathogens.
- The T cells are like soldiers who search out and destroy the targeted invader.

### Indian SARS-CoV-2 Consortium on Genomics

- Indian SARS-CoV-2 Consortium on Genomics (INSACOG) is a **multi-laboratory, multi-agency, pan-India network to monitor genomic variations in the SARS-CoV-2**.
- It helps in the understanding of how the virus spreads and evolves.
- Genomic surveillance can generate a rich source of information for tracking pathogen transmission and evolution on both national and international levels.

### 6.7 Sputnik V Vaccine

Recently, the **Sputnik V Vaccine** has been cleared for emergency use by the **Drugs Controller General of India**.

- It is now the third coronavirus vaccine to get emergency use approval, after **Covishield (Serum Institute of India)** and **Covaxin (Bharat Biotech)**.





### What is Sputnik V Vaccine?

- It is developed by **Gamaleya National Research Institute of Epidemiology and Microbiology** in Moscow.
- Sputnik V is to be stored at **-18°C in its liquid form.**
- It has **demonstrated an efficacy rate of 91.6 per cent** in the interim analysis of phase 3 clinical trial, which included data on 19,866 volunteers in Russia.

### Working of Sputnik V Vaccine

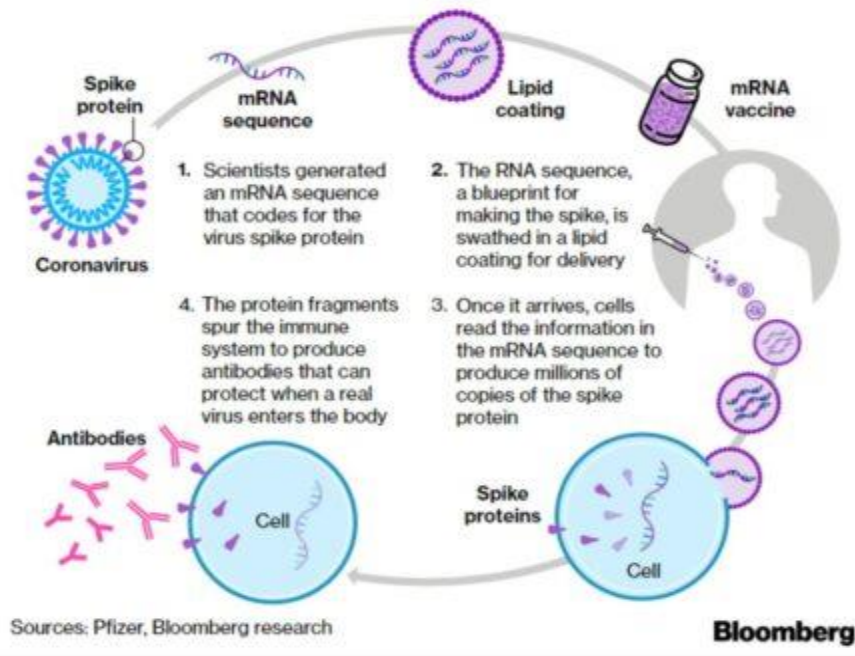
- It uses **two different viruses** that cause the **common cold (adenovirus) in humans.**
  - The **adenoviruses are weakened** so they cannot replicate in humans and cannot cause disease.
- They are also modified so that the **vaccine delivers a code for making the coronavirus spike protein.**
  - It aims to ensure that **when the real virus tries to infect the body, it can mount an immune response** in the form of antibodies.
- Sputnik uses a **different vector for each of the two shots** in a course of vaccination.
  - It provides **immunity with a longer duration than vaccines using the same delivery mechanism** for both shots.

### 6.8 HGC019 Vaccine



### How mRNA Vaccines Work

The vaccine spurs healthy cells to produce viral proteins that stimulate a potent immune response



Recently, the **Department of Biotechnology (DBT), Ministry of Science & Technology** has announced that it has approved additional funding towards clinical studies of **HGCO19 Vaccine**.

- It is **India's 'first of its kind' mRNA-based COVID-19 vaccine**.
- It is developed by Pune-based biotechnology company **Gennova Biopharmaceuticals Ltd.**
- It is being funded under the '**Mission COVID Suraksha- The Indian COVID-19 Vaccine Development Mission**'.
- Gennova, in collaboration with **HDT Biotech Corporation USA**, has developed the COVID-19 mRNA vaccine HGCO19.

### What is mRNA Vaccine?

- The coronavirus vaccine based on mRNA, once injected into the body, will **instruct the body's cells to create copies of the spike protein**.
- The **mRNA is coded to tell the cells to recreate the spike protein** of the coronavirus SARS-CoV-2, which causes Covid-19.



- It is the spike protein which appears as spikes on the surface of the coronavirus that **initiates the process of infection** and it allows the virus to penetrate cells, after which it goes on to replicate.
- The mRNA vaccines work by using mRNA or messenger RNA, which is the **molecule that essentially puts DNA instructions into action**.
- The mRNA vaccines have the advantage that **scientists are not growing the virus in the lab**, which has been a hindrance sometimes to create enough virus or viral particles to give in a vaccine.

### 6.9 Improvement in Lithium-ion Battery Performance

Recently, the researchers from IIT Guwahati have developed a technique to **improve the performance of rechargeable lithium-ion batteries**.

- The 2019 Nobel Prize in Chemistry was jointly awarded to **Stanley Whittingham, John Goodenough and Akira Yoshino** for work that led to the **development of lithium-ion batteries**.
- The **first commercially viable Li-ion battery** was created by Yoshino in 1985 who developed on Whittingham and Goodenough's work.
- The **Royal Swedish Academy of Sciences** notes that the **foundation of the lithium-ion battery** was laid during the oil crisis of the 1970s.

#### Lithium Ion Batteries

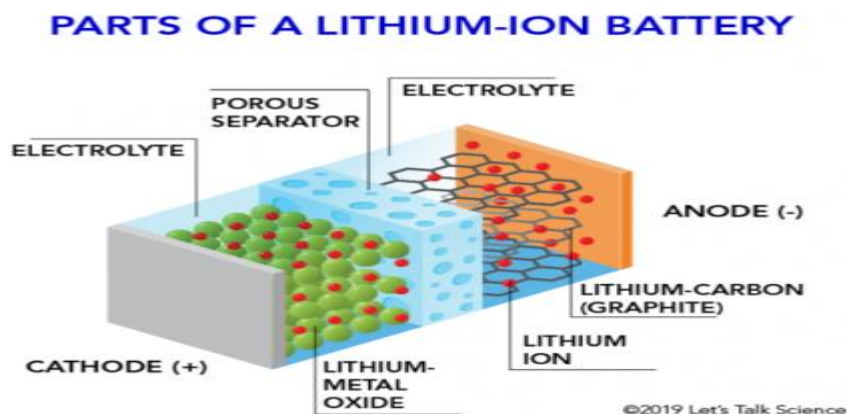
- It is an **advanced battery technology** that uses lithium ions as a **key component of its electrochemistry**.
- During a discharge cycle, **lithium atoms in the anode are ionized** and separated from their electrons.
- The **lithium ions move from the anode** and pass through the electrolyte until they reach the cathode, where they recombine with their electrons and electrically neutralize.
- The lithium ions are **small enough to be able to move through a micro-permeable separator** between the anode and cathode.

#### Applications of Lithium Ion Batteries

- These batteries can be **used to store solar and wind power**, which means that with their widespread use it may even be possible to live in a fuel free society.
- A lithium battery for an emergency power backup or UPS **protects from traditional power loss or instability**.
- The lightweight lithium batteries **power electric vehicles with increased efficiency** due to reduced weight and size as compared to lead-acid batteries.
- The rechargeable lithium batteries are **ideal for remote monitoring systems** due to their long life, small size and not losing power via self-discharge during inactivity.

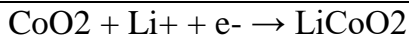
### Working of a Lithium – Ion Battery

Lithium-ion batteries provide power through the movement of ions. Lithium is extremely reactive in its elemental form. That's why lithium-ion batteries don't use elemental lithium. Instead, lithium-ion batteries typically contain a lithium-metal oxide, such as lithium-cobalt oxide (LiCoO<sub>2</sub>). This supplies the lithium-ions. Lithium-metal oxides are used in the cathode and lithium-carbon compounds are used in the anode. These materials are used because they allow for intercalation. Intercalation means that the molecules are able to insert something into them. In this case, the electrodes are able to have lithium-ions move easily in and out of their structures.

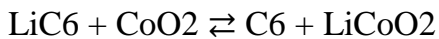


Inside a lithium-ion battery, oxidation-reduction (Redox) reactions take place.

**Reduction** takes place at the cathode. There, cobalt oxide combines with lithium ions to form lithium-cobalt oxide (LiCoO<sub>2</sub>). The half-reaction is:



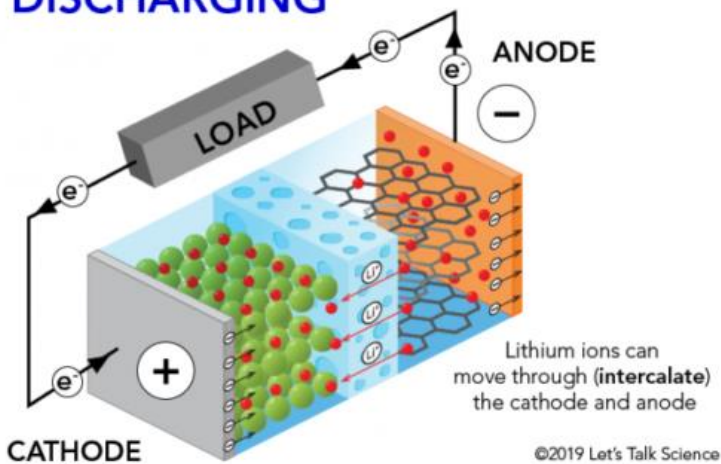
**Oxidation** takes place at the anode. There, the graphite intercalation compound  $\text{LiC}_6$  forms graphite ( $\text{C}_6$ ) and lithium ions. The half-reaction is:



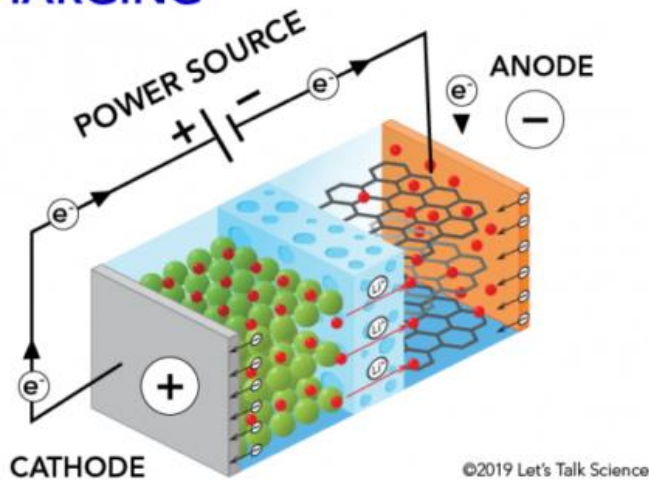
Recharging a lithium-ion battery work

When the lithium-ion battery in your mobile phone is powering it, positively charged lithium ions ( $\text{Li}^+$ ) move from the negative anode to the positive cathode. They do this by moving through the electrolyte until they reach the positive electrode. There, they are deposited. The electrons, on the other hand, move from the anode to the cathode.

## DISCHARGING



## CHARGING



When you charge a lithium-ion battery, the exact opposite process happens. The lithium ions move back from the cathode to the anode. The electrons move from the anode to the cathode.

As long as lithium ions are making the trek from one electrode to another, there is a constant flow of electrons. This provides the energy to keep your device running. Since this cycle can be repeated hundreds of times, this type of battery is **rechargeable**.

### Advantages of Lithium Ion Batteries

- It has **high energy density** and having potential for yet higher capacities.
- It requires **relatively low self-discharge** i.e. self-discharge is less than half that of nickel-based batteries.
- It needs low maintenance because **no periodic discharge is needed** and there is no memory.
- They **do not contain toxic cadmium**, which makes them easier to dispose of than Ni-Cd batteries.

### Concerns associated with Lithium Ion Batteries

- The major disadvantages of **Li-ion batteries include their susceptibility to overheating** and their being prone to damage at high voltages.
- The batteries made with **flammable and combustible materials** also start losing

their capacity over time such as a laptop battery in use for a few years does not function as well as a new one.

- Li-ion batteries **require safety mechanisms to limit voltage and internal pressures**, which can increase weight and limit performance in some cases.

### New technology to improve lithium-ion battery performance

- The researchers have developed a technique which can precisely estimate one of the most important battery internal states known as **SOC, short for state of charge**.
  - **SOC reflects the remaining capacity of the battery** that is how much more charge can be withdrawn from the battery before it gets fully discharged.
- The **knowledge of remaining capacity** helps to:
  - Optimize battery's capacity utilization;
  - Prevent overcharging and undercharging of the battery;
  - Increases its lifespan, reduces cost; and
  - Ensures safety of the battery and its surroundings

### Alternatives to Li-Ion Batteries

- In 2019, the Johns Hopkins Applied Physics Laboratory developed a **Lithium-ion battery that does not catch fire**.
- In January 2020, researchers from Australia claimed that they developed the **world's most efficient lithium-sulfur (Li-S) battery**.
  - It is **capable of powering a smartphone for five continuous days** which is the equivalent of an electric car being able to drive a distance of over 1,000 km.
- The materials used in the **Li-S batteries are not different from those in Li-ion batteries** but the Australian researchers reconfigured the **design of the sulfur cathodes to accommodate higher stress** without a drop in overall capacity.
- The Li-S batteries are **generally considered the successors of Li-ion batteries** because of their **lower cost of production, energy efficiency and improved safety**.





- Their cost of production is lower because **sulfur is abundantly available.**

### 6.10 Initiatives for National Internet Exchange of India (NIXI)

Recently, the Secretary Ministry of Electronics & Information Technology (MeitY) & Chairman NIXI has inaugurated three path breaking initiatives for **National Internet Exchange of India (NIXI)**.

#### IPv6 Expert Panel (IP Guru)

- IP Guru is a group to **extend support to all the Indian entities** who are finding it technically challenging to migrate and adopt IPv6.
- The IPv6 expert group will **help in identifying & hiring agency** that will help end customer by providing necessary technical support to adopt IPv6.
- The panel will **guide all such Indian entities** and help in increasing the IPv6 adoption.
- It is a joint effort of **DOT, MeitY & community** to promote IPv6.
- The expert panel group **comprises members from government and private organizations.**

#### NIXI Academy

- It is created to **educate technical/non-technical people in India** to learn and relearn technologies like IPv6 which are normally not taught in Educational Institutes.
- It is an **easy-to-use platform** helps:
  - Network operators and educators understand networking best practices, principles and techniques;
  - Manage Internet resources better; and
  - Use appropriate Internet technologies more effectively.
- The **NIXI academy comprises an IPv6 training portal** which is developed with the help of various technical experts in order to provide mass training to the community.
- The **internet community** will be able to learn from various technical modules





through NIXI academy.

### NIXI-IP-INDEX

- NIXI has developed an **IPv6 index portal** for the Internet community.
- **NIXI-IP-INDEX portal** will showcase the IPv6 adoption rate in India and across the world.
- It can be used to **compare IPv6 Indian adoption rate** with other economies in the world.
- The portal will **motivate organisations to adopt IPv6**, provide inputs for planning by technical organisations and research by academicians.

### National Internet Exchange of India (NIXI)

- It is a **not for profit Organization** under section 8 of the Companies Act 2013.
- It was set up for **peering of ISPs among themselves for the purpose** of routing the domestic traffic within the country.
- It is **working since 2003** for spreading the **internet infrastructure to the citizens of India** through the following activities:
  - **Internet Exchanges** through which the internet data is exchanged amongst ISP's, Data Centers and CDNs.
  - **.IN Registry**, managing and operation of .IN country code domain and **.भारत IDN domain** for India.
  - **IRINN**, managing and operating Internet protocol (**IPv4/IPv6**)

### 6.11 Coronavirus Transmission is Primarily Airborne

Recently, a team of experts has looked at available research and published their assessment in The Lancet that there is strong, consistent evidence that the **primary transmission route of SARS-CoV-2 is indeed airborne.**

#### Implications of assessment of coronavirus

- If transmission is airborne, **public health measures** would need to take that into account.



- The measures that **focus solely on large-droplet-borne transmission**, but fail to treat the virus as predominantly airborne, would leave people unprotected.

### How coronavirus transmission is airborne?

- The six experts from the UK, US and Canada identified **streams of evidence that collectively support the hypothesis** that SARS-CoV-2 primarily transmits through the airborne route.
- The **super-spreading events** account for substantial SARS-CoV-2 transmission.
  - The detailed analyses of human behaviours in concerts, cruise ships etc. have shown **patterns consistent with airborne spread of SARS-CoV-2** that cannot be adequately explained by droplets or fomites.
- The **long-range transmission of SARS-CoV-2 between people in adjacent rooms** has been documented in quarantine hotels, but never in each other's presence.
- The **asymptomatic or pre-symptomatic transmission from people** who are not coughing or sneezing is likely to account for at least a third, and perhaps up to 59%, of all transmission globally.
  - It is a key way SARS-CoV-2 has spread around the world, indicating a **predominantly airborne mode of transmission**.
- The **transmission of SARS-CoV-2 is higher indoors than outdoors** and is substantially reduced by indoor ventilation.
  - The researchers found that both **observations support a predominantly airborne route of transmission**.
- The new infections have been documented in healthcare organisations where there have been **strict contact-and-droplet precautions** and use of PPE designed to protect against droplet but not aerosol exposure.
- In laboratory experiments, **SARS-CoV-2 stayed infectious in the air for up to 3 hours**.
  - In one study, viable SARS-CoV-2 was identified in air samples from rooms occupied by Covid-19 patients in the **absence of aerosol-generating procedure**.
- The SARS-CoV-2 has been **identified in air filters and building ducts in**



**hospitals** with Covid-19 patients.

- The studies involving **infected caged animals that were connected to separately caged uninfected animals** via an air duct have shown transmission of SARS-CoV-2.

## 6.12 Whitest Paint

Recently, the engineers from Purdue University in the US have created what they are calling the **whitest paint** yet.

### What is the Whitest Paint?

- The team of researchers at the university created an **ultra-white paint** in October pushing the limits of how white paint can be.
- The **older formulation was made of calcium carbonate**, while the new one is made up of **barium sulphate**, which makes it whiter.
- The newer paint is **whiter and keeps the surface areas it is painted on cooler** than the formulation before this could.
- The researchers have said that if this **new paint was used to cover a roof area of 1,000 square feet**, it may be able to get a cooling power of 10 kilowatts.
- The team has also claimed that this **paint may be the closest equivalent to the blackest black paint called "Vantablack"** that is able to absorb up to 99.9 per cent of visible light.

### Absorption of light by different colours

- It is necessary to note that whenever an object is seen by the eye, it is **either because of sunlight or the artificial light** in the room.
- The light is made up of **seven different colours** (Violet, Indigo, Blue, Green, Yellow, Orange and Red or VIBGYOR).
- If an individual is looking at a sofa that is green, this is because the **fabric or material it is made up of is able to absorb all the colours except green**.
  - It implies that the **molecules of the fabric reflect the green coloured wavelengths**, which is what the eye sees.



- The colour of any object or thing is determined by the wavelength the **molecules are not able to absorb.**

### Determination of wavelengths of light reflected or absorbed

- It is dependent on **how electrons are arranged in an atom** (the building block of life, an atom is made up of electrons, protons and neutrons).
- If an object is black, it is because it has **absorbed all the wavelengths and therefore no light is reflected** from them.
- It is the reason that darker objects, as a result **absorbing all wavelengths tend to heat up faster** (during absorption the light energy is converted into heat energy).

### Reasons for Whitest Paint

- It is the paint's high concentration of a chemical compound called **barium sulfate**, which is also used to make **photo paper and cosmetics white.**
- The team has used **different sized particles of this chemical compound**, which means different sizes scatter different amounts of light.
- It implies that a **varying size of particles of the compound** make sure that the paint can scatter more of the light spectrum from the sun.

### 6.13 Dogecoin

Recently, the **Dogecoin's value has risen phenomenally**, adding around \$19.9 billion in the last 24 hours, and now valued at \$34 billion.

- According to CNBC, the **digital token was created in 2013** by software engineers **Billy Markus and Jackson Palmer.**
  - It was **created as a faster but "fun" alternative to Bitcoin.**
- It was **started as a satire on the numerous fraud crypto coins** that had sprung up at the time.
- It takes its **name and logo from a Shiba Inu meme** that was viral several years ago.
- Unlike Bitcoins, whose maximum possible number is fixed at 21 million, **Dogecoin numbers do not have an upper limit.**

### Reason behind rise in Dogecoin

- The main reason believed to be behind Dogecoin's meteoric surge is the same that has propelled the value of **Bitcoin and Ethereum**.
  - The Coinbase's market cap briefly hit \$100 billion after it went public, and the values of **Bitcoin and Ethereum touched \$64,000 and \$2,500, respectively**.
- The reason behind its current success is said to be a Reddit group called SatoshiStreetBets, where **members built up an enthusiasm for the cryptocurrency** in a manner similar that led to the rise of GameStop.

### Concerns over Dogecoin

- The investors have expressed fears that **Dogecoin's rise would lead to a bubble**, given that buyers do not see any meaningful value in the digital token.
- The cryptocurrencies are considered **highly volatile without having any intrinsic value such as land or gold**, and may crash as fast as they can rise.
  - It makes **investors susceptible to sudden scares** as well as manipulation by small groups who often hold large numbers of the virtual currency in circulation.

### 6.14 Multisystem Inflammatory Syndrome in Children (MIS-C)

Recently, a new report shows that a significant number of young people with **Multisystem Inflammatory Syndrome in Children (MIS-C)** develop neurological symptoms, including hallucinations.

- It is a condition where **different body parts can become inflamed**, including the heart, lungs, kidneys, brain, skin, eyes, or gastrointestinal organs.
  - It is also called **pediatric multi-system inflammatory syndrome (PMIS or PIMS)**.
- Children with MIS-C may have a **fever and various symptoms, including abdominal (gut) pain, vomiting, diarrhea, neck pain, rash, bloodshot eyes, or feeling extra tired**.
- It typically **emerges two to six weeks after a COVID infection**, often one that



produces only mild symptoms or none at all.

- The **syndrome is rare**, but can be very serious.
- The **exact cause of MIS-C is not known yet**, but it appears to be an excessive immune response related to COVID-19.

### Signs and Symptoms of Multisystem Inflammatory Syndrome in Children (MIS-C)

- The specific features of MIS-C may include:
  - **Kawasaki-like symptoms:** Rash, bloodshot eyes, swollen hands and feet, cracked lips, a swollen tongue that looks like a strawberry, and an enlarged lymph node in the neck.
  - **Toxic shock-like symptoms:** Severe flu-like symptoms with high fever, as well as a sunburn-like rash, low blood pressure, and a very high heart rate.
  - **Gastrointestinal symptoms:** diarrhea, vomiting, abdominal pain, or a swollen abdomen.
  - **Respiratory symptoms** that have been reported with COVID-19, such as persistent cough and shortness of breath, may or may not be present.
- The new findings strengthen the theory that the **syndrome is related to a surge of inflammation** triggered by an immune response to the virus.
- The **new study evaluated children under 18** who were admitted to Great Ormond Street Hospital (GOSH) between April and September of last year with the syndrome.
- **All 24 of the patients with neurological symptoms** had headaches and 14 had encephalopathy.
  - **Encephalopathy** is a general term that can involve **confusion, problems with memory or attention** and other types of altered mental function.
- **One child had seizures and three children had peripheral nerve abnormalities** including weakness in facial or shoulder muscles.
- **Six of the children had weakness or difficulty** controlling muscles used in speech.
- Thirteen of the 24 with neurological symptoms needed to be **placed on ventilators** and 15 needed medications to improve their heart contractions.



### 6.15 Ingenuity Mission on Mars

Recently, the NASA has announced that the **Ingenuity** had performed its **first flight on Mars**.

#### Ingenuity Mission

- It is the **first flight of a powered aircraft** on another planet.
- The helicopter's main task is to **carry out a technology demonstration** to test the first powered flight on Mars.
- It is the **first helicopter to fly on Mars**.
- It was **carried by NASA's rover** called Perseverance.
- The helicopter got its name because of a high school student **Vaneeza Rupani of Alabama**.

#### Objective of Ingenuity Mission

- It will help **collect samples from the surface** from locations where the rover cannot reach.
- Its mission is **experimental in nature and completely independent of the rover's science mission** which is searching for signs of ancient life and collecting samples of rock and sediment.
- It is able to **fly using counter-rotating blades** that spin at about 2,400 rpm.
- It has a **wireless communication system**, and is equipped with computers, navigation sensors, and two cameras.
- The helicopter was placed on the Martian surface to **test the powered flight in the planet's thin air**.
- Its performance during these experimental test flights will help **inform decisions about small helicopters for future Mars missions**.
- It would **give scientists a new perspective on a region's geology** and even allow them to peer into areas that are too steep or slippery to send a rover.

### 6.16 Six Minute Walk Test





Recently, the Ministry of Health and Family Welfare has virtually launched the **Six Minute Walk Test**.

### What is Six Minute Walk Test?

- It is **Maharashtra's government** awareness campaign for **monitoring fitness of lungs**.
- It is a **six minute walk test** and the campaign is aimed to **increase the awareness** among the citizens about the simple test which can be done at home.
- It helps to **identify the depletion in oxygen level** and the patient can be immediately admitted to the hospital if the level drops below the critical level.
- The test is **necessary for those who have fever, cough and cold or symptoms of Corona infection** as well as for those patients who are in home isolation.
- The oxygen level should be noted with the **help of pulse oximeter** by putting the finger in the oximeter.
- The oximeter **should not be removed** and the **patient should start walking in the room** with the oximeter on your finger and walk for six minutes (do not climb stairs).
- If the **Oxygen level is dropped below 93** or it is **reducing by more than 3 percent** of the initial level registered before walking then:
  - It can be deduced that the **person is not getting enough oxygen** according to his/her requirement and needs to be hospitalised immediately.
- The persons above 60 years of age can do this test for 3 minutes instead of 6 minutes.

### Idea behind Six Minute Walk Test

- The six minute walking test (6MWT) was **developed by the American Thoracic Society** and it was officially introduced in 2002.
- It is a **sub-maximal exercise** test used to assess aerobic capacity and endurance.
- The distance covered over a time of **6 minutes is used as the outcome** by which to compare changes in performance capacity.
- It provides **information regarding functional capacity**, response to therapy and



prognosis across a broad range of chronic cardiopulmonary conditions.

### 6.17 Advanced Light Helicopter (ALH) Mk III Aircraft

Recently, the **Indian Naval Air Squadron (INAS) 323**, the the **first unit of the indigenously built ALH (Advanced Light Helicopter) Mk III aircraft**, was commissioned into the Indian Navy.

#### Advanced Light Helicopter (ALH) Mk III Aircraft

- It is a **multi-role chopper with the Shakti engine** manufactured by **Hindustan Aeronautics Limited (HAL)**.
- The **Mk III version of the ALH has an all glass cockpit** and will be used for search and rescue, special operations and coastal surveillance.
- It is a **step up from Mk 1** which will be able to **mitigate low visibility during search and rescue operations** even at night.
- The **indigenously designed and developed Advanced Light Helicopter (ALH-DHRUV)** is a twin engine, multi-mission new generation helicopter in the 5.5 ton weight class.
- It is fitted with **Composite Air Frame and Glass Cockpit** along automatic flight control system (AFCS).
- The **Helmet Pointing System (HPS)** adds to the display of helicopter's flight and platform information, mission data, target information as well as additional enhanced application capabilities.
- It is loaded with **Integrated Self Protection Suite (IDAS)** which provides warning and situational awareness to the crew in a hostile threat environment.

### 6.18 Oxygen Therapy for COVID-19 Patients

Graphic: Abir Bhaduri

## CONVENIENT FOR PATIENTS

The HFNO is a piece of equipment that delivers steady warmed and humidified oxygen at very high flow rates (nearly 60 litres per minute) through plugs that are fitted to a patient's nostrils

It's more than just an oxygen mask, but not as complicated as full-fledged ventilator machines that are deployed to treat patients with very serious breathlessness

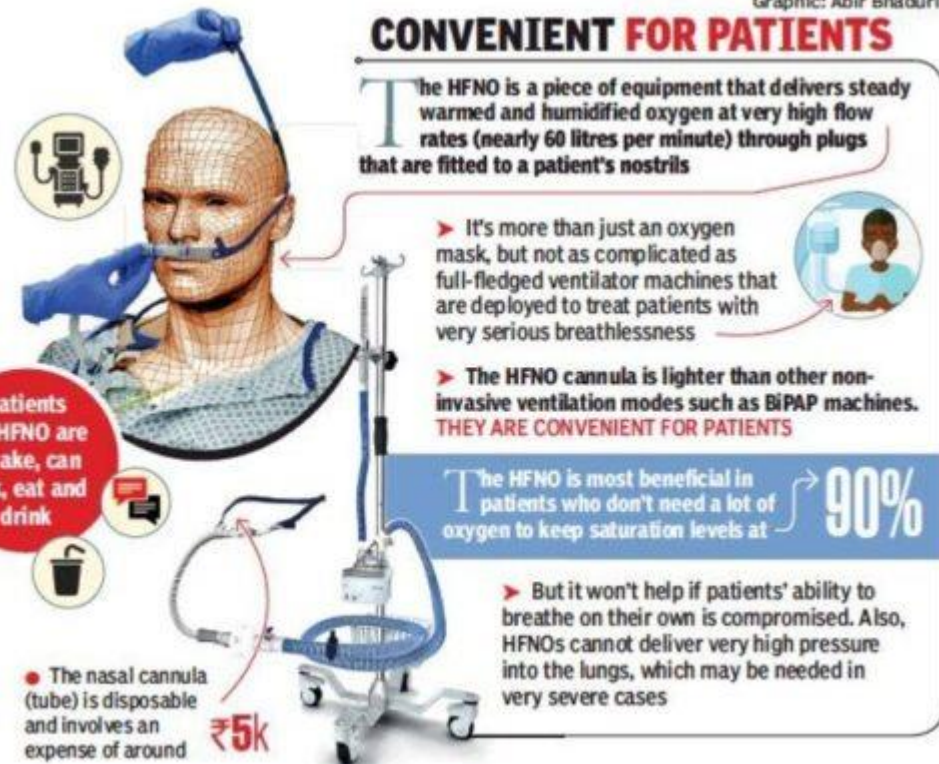
The HFNO cannula is lighter than other non-invasive ventilation modes such as BiPAP machines. **THEY ARE CONVENIENT FOR PATIENTS**

The HFNO is most beneficial in patients who don't need a lot of oxygen to keep saturation levels at **90%**

But it won't help if patients' ability to breathe on their own is compromised. Also, HFNOs cannot deliver very high pressure into the lungs, which may be needed in very severe cases

Patients on HFNO are awake, can talk, eat and drink

The nasal cannula (tube) is disposable and involves an expense of around ₹5k



Recently, the ongoing second surge in Covid-19 cases has seen a **huge rise in the demand for supplemental oxygen** which makes the gas so vital in Covid-19 management.

### Requirement of Oxygen support for COVID-19 patients

- A small proportion of Covid-19 patients need oxygen support, when **shortness of breath** progresses to a **more acute condition**.
- Most patients with Covid-19 have a **respiratory tract infection**, and in the most severe cases their symptoms can include shortness of breath.
- In a small proportion of such cases, it can **progress to a more severe and systemic disease** characterised by Acute Respiratory Distress Syndrome (ARDS).

### Causes of shortness of breath due to COVID-19 infection

- The **shortness of breath** occurs because of the way Covid-19 affects the patient's respiratory system.
  - When a person inhales, the **tiny air sacs in the lungs i.e. alveoli, expand to capture the oxygen**, which is then transferred to blood vessels and

transported through the rest of the body.

- The **respiratory epithelial cells line the respiratory tract** whose primary function is to protect the airway tract from pathogens and infections, and also facilitate gas exchange.
- The **body's immune system releases cells that trigger inflammation** in order to fight such infections which attack the epithelial cells.
  - It **impedes the regular transfer of oxygen in the lungs** when this inflammatory immune response continues.
- The **low levels of oxygen triggered by Covid-19 are inflammatory markers**, which include elevated white blood cell counts and neutrophil counts.

### Conditions required for using Oxygen in Covid-19 clinical management

- According to the **clinical management protocol**, a person is suffering from moderate disease when he or she is diagnosed:
  - With **pneumonia** with no signs of severe disease;
  - With the **presence of clinical features of dyspnea** (shortness of breath) and/or **hypoxia** (when the body is deprived of adequate oxygen supply at the tissue level);
  - **Fever, cough, including SpO<sub>2</sub>** (oxygen saturation level) less than 94% (range 90-94%) in room air
- In moderate cases, **oxygen therapy is the primary form of treatment** in which the target is to achieve 92-96% SpO<sub>2</sub>, or 88-92% in patients with chronic obstructive pulmonary disease.
  - The devices for administering oxygen in moderate disease are **nasal prongs, masks, or masks with breathing/non-rebreathing reservoir bags**, depending on requirement.
  - The protocol also recommends **awake proning (having patients lie on their stomachs)** as a rescue therapy to increase oxygenation.
- The severe cases are defined in three categories i.e. **severe pneumonia, acute respiratory distress syndrome, and sepsis**.
  - The clinical management protocol recommends **oxygen therapy at 5 litres/min**.



- When **respiratory distress and/or hypoxemia of the patient cannot be alleviated** after receiving standard oxygen therapy, the protocol recommends that high-flow nasal cannula oxygen therapy or non-invasive ventilation can be considered.
- The patients with **hypercapnia (exacerbation of obstructive lung disease), hemodynamic instability, multi-organ failure, or abnormal mental status** should generally not receive High Flow Nasal Cannula Oxygenation (HFNO).

### 6.19 RESPOND Programme of ISRO

Recently, the **Indian Space Research Organisation (ISRO)** has announced that it will support the projects of IIT-Delhi under its **RESPOND Programme**.

#### Key Highlights

- The ISRO will support **eight joint research projects mooted by the Space Technology Cell (STC)**, Indian Institute of Technology (IIT) Delhi.
- The projects will be **coordinated by ISRO scientists** at the Space Applications Centre (SAC), the Liquid Propulsion Systems Centre (LPSC), the Semi-conductor Laboratory (SCL) and the Vikram Sarabhai Space Centre (VSSC).
- The **eight collaborative research projects** on which the scientists from different ISRO centres and IIT Delhi will work jointly include:

#### **Establishing a coupled Indian Land Data Assimilation System (ILDAS) for identifying hydrologic extremes**

- It will have widespread water resource applications, including drought and flood forecasting and understanding land-atmosphere interactions.

#### **Classical Trajectory Monte Carlo Simulations of the Plasma dynamics in electrode-less plasma thruster**

- The project aims to understand the plasma dynamics in electrode-less thrusters, which are used for electric propulsion.
- The electric propulsion schemes exhibit high fuel efficiency and lower thrust than the chemical propulsion schemes and are therefore preferred for deep space



missions.

### **Analysis of Variable Stiffness Composite Honeycomb Sandwich Structures with Embedded Delamination**

- It aims to develop an efficient finite element formulation to evaluate displacements and stresses in composite structures widely used in aerospace and space applications.

### **Indigenous Sensor based Real Time Flood Warning Smart System**

- It aims to provide real-time warning to the community, by assimilating information through sensor networks and corrected satellite products.

### **Impact of Satellite Observations in a Coupled System for Predicting Storm Tides and its Coastal Inundation**

- It aims at real-time prediction of the vulnerability of the Indian coasts to tropical cyclones through satellite observations well in advance to minimize damages wreaked by a cyclone.

### **Development of a Numerical Simulator for Micro-fabricated Electropray Thrusters**

- It aims to develop advanced computational tools to simulate miniaturized electropray thrusters to speed up the design of such thrusters for small spacecrafts.
- It addresses the need for a miniaturized propulsion system for manoeuvring and orbit control of the micro and nano satellites at a low cost.

### **Designing Speciality Glasses Employing Machine Learning and Meta-Heuristic Optimization**

- The aim of the project is to develop new glasses with improved thermal and mechanical performance, which can withstand conditions of extreme cold or hot weather in the outer space.

**Low-Pressure Systems (LPSs)** and their nonlinear interaction with other scales in atmosphere through the lens of Scale Energetics.

### **What is RESPOND Programme of ISRO?**

- Under RESPOND, projects in the **advanced areas of relevance to Space**





**programme are encouraged** to be taken up by premiere universities/academic institutions.

- **ISRO helps the academic institutions to establish the necessary technical facilities** and also provide fellowships to researchers to work on cutting edge research topics.
- **ISRO provides financial support to Academic Institutions in India** for conducting research and development activities related to Space Science, Space Technology and Space Applications.

### Significance of RESPOND Programme

- Its objective is to **establish strong links with premiere academic institutions** in the country to carry out research and developmental projects which are of relevance to Space.
- It aims to **enhance academic base, generate quality human resources and infrastructure** at the academic institutes to support the Indian Space programme.
- The research studies conducted by the STC/ Academia are expected to be **directed towards some of the future Space activities**, which would be a good supplement to various missions undertaken by ISRO.
- The **research proposals received from academia for consideration under RESPOND** are accepted for taking up research along with appropriate technical and financial support.

### 6.20 NASA's Perseverance mission produced oxygen on Mars

Recently, NASA has announced that a device aboard the rover under **Perseverance Mission** was able to **produce oxygen from the thin Martian atmosphere** for the first time.

#### Production of oxygen by Perseverance Mission

- The **Mars Oxygen In-Situ Resource Utilization Experiment (MOXIE)** produced 5 grams of oxygen from carbon dioxide in the Martian atmosphere, enough for an astronaut to breathe for 10 minutes.
- On Mars, **carbon dioxide makes up ~96%** of the gas in the planet's atmosphere while the **Oxygen is only 0.13%**, compared to 21% in Earth's atmosphere.



- It is similar to a tree on Earth i.e. **MOXIE inhales carbon dioxide and exhales oxygen.**
- **MOXIE separates oxygen atoms from carbon dioxide** molecules in order to produce oxygen.
  - It does so by **using heat at a temperature of around 800 degrees Celsius**, and in the process also **produces carbon monoxide** as a waste product, which it releases in the Martian atmosphere.

### Producing oxygen on Mars is important – Because

- A substantial amount of oxygen supply on Mars is **essential for crewed missions** that plan to go there.
- The oxygen can also be **used for rockets to use as fuel** while coming back to Earth.
- The NASA has said that for four astronauts to take off from Mars, a future mission would require around **7 metric tons of rocket fuel and 25 metric tons of oxygen.**
- The scientists believe that it will be an **enormous challenge to haul the 25 metric tons of oxygen** from Earth to Mars for the return journey.
  - It would become significantly easier if the **liquefied oxygen can be produced on the Red Planet.**
- NASA hopes to build a **larger technological descendant of the experimental MOXIE** that can do this job.
  - A one-ton oxygen converter of this kind would be much more **economical and practical to take to Mars**, instead of 25 metric tons of oxygen.

### 6.21 Significance of the Crew-2 Mission

Recently, four astronauts were launched to the **International Space Station (ISS)** from Florida under **Crew-2 mission.**

- Out of the four astronauts, two are from **NASA** and two are from the **Japan Aerospace Exploration Agency (JAXA)** and the **European Space Agency (ESA).**
- In May 2020, **NASA's SpaceX Demo-2** test flight lifted off for the ISS carrying



astronauts Robert Behnken and Douglas Hurley.

- The aim of this test flight was to see if **SpaceX capsules could be used on a regular basis** to ferry astronauts to and from the ISS.
- Demo-2 was followed by the **Crew-1 mission** in November, which was the **first of six crewed missions between NASA and SpaceX** marking the beginning of a new era for space travel.

### Crew-2 Mission

- It is a part of **collaboration between NASA and SpaceX** under the **Commercial Crew Program**.
- It is the **second crew rotation of the SpaceX Crew Dragon** and the first with international partners.

### Importance of Crew-2 Mission

- The Crew-2 astronauts will **join the members of Expedition 65**.
- They will stay aboard the ISS for six months during which time they will **conduct science experiments in low-Earth orbit**.
- The central focus during this time will be to **continue a series of Tissue Chips in Space studies**.
  - Tissue Chips are **small models of human organs** that contain multiple cell types that behave similarly to the human body.

### Commercial Crew Program

- Its main objective is to **make access to space easier in terms of its cost**, so that cargo and crew can be easily transported to and from the ISS, enabling greater scientific research.
- The NASA plans to **lower its costs by sharing them with commercial partners** such as Boeing and SpaceX through Commercial Crew Program.
- It gives the companies **incentive to design and build** the Commercial Orbital Transportation Services (COTS).
- NASA can focus on building spacecraft and rockets meant for **deep space exploration missions**.



## 6.22 Reaching Zero Forum on Malaria Elimination

Recently, the Union Minister of Health & Family Welfare has chaired the “**Reaching Zero**” forum on malaria elimination to celebrate **World Malaria Day**.

### Key Highlights

- India has been able to achieve **remarkable success in reducing the malaria burden** in terms of cases by 84.5% and deaths by 83.6%.
- WHO has attributed India’s success to **rejuvenated political commitment, strengthened technical leadership** which focused on prioritizing the **vector control measures** and increased domestic funding.
- In February 2021, **El Salvador became the first country in Central America** to be certified malaria-free by World Health Organisation (WHO).
- Between 2000 and 2019, the number of countries with **fewer than 100 indigenous malaria cases increased** from 6 to 27.
- The Prime Minister of India has been among the **18 Global leaders** who endorsed the **Malaria Elimination roadmap of Asia Pacific Leaders Malaria Alliance** at the East Asia Summit in 2015.
  - It was then that the alliance leadership set the goal of ensuring that the **Region becomes free of malaria by 2030**.
- In 2020, as many as **116 districts in the India had reported zero malaria cases**.

### Reaching Zero Forum on Malaria Elimination

- It is a virtual forum jointly launched by **World Health Organisation (WHO)** and **RBM Partners**.
- It is focused on the World Malaria Day elimination theme of “**Reaching the Zero Malaria target**”.
- The **Country leaders, frontline and community health workers, and global partners** will come together to discuss their malaria elimination journeys and inspire others to reach the target of zero malaria.

### Initiatives in India to eliminate malaria

- **Malaria Mukh Abhiyan** in the Bastar Region of Chhattisgarh was successfully



carried out wherein 3.78 million people were screened for malaria.

- **National Framework for Malaria Elimination (NFME) 2016-2030:** It outlines India's strategy for elimination of the disease by 2030.
  - The objectives of the national framework are:
    - Eliminate malaria from all low (Category 1) and moderate (Category 2) endemic states/UTs (26) by 2022;
    - Reduce incidence of malaria to less than 1 case per 1000 population in all States/UTs and the districts and malaria elimination in 31 states/UTs by 2024;
    - Interrupt indigenous transmission of malaria in all States/ UTs (Category 3) by 2027;
    - Prevent re-establishment of local transmission of malaria in areas where it has been eliminated and to maintain malaria-free status of the country by 2030.
- **Malaria Elimination Research Alliance (MERA) India:** It aims to identify, articulate, prioritise and respond to the research needs of the country in a coordinated and combinatorial way to eliminate malaria from India by 2030.
  - It was launched by the ICMR Director General in 2019.
  - It is a conglomeration of National and International partners like World Health Organization (WHO), National Vector Borne Diseases Control Program (NVBDCP), and medicines for Malaria Venture (MMV).

### WHO initiatives for Malaria Elimination

- **E2020 initiative:** In 2017, WHO launched the E-2020 initiative to support a group of countries to achieve zero indigenous cases of malaria by 2020.
  - 21 countries across five regions were identified as having the potential to reach the milestone of eliminating malaria.
  - Of the 21 countries, eight reported zero cases of malaria, as of April 2021 which included, Algeria, Belize, Cabo Verde, China, El Salvador, Iran, Malaysia, and Paraguay.
- **E2025 initiative:** It aims to halt transmission of the disease in 25 countries by 2025 co-sponsored by the RBM Partnership to End Malaria.



- The set of countries includes all E-2020 member countries that did not yet receive malaria-free certification, along with eight new countries.
- Guatemala, Honduras, Dominican Republic, Panama, Sao Tome and Principe, Vanuatu, Thailand, and the Democratic People's Republic of Korea.

### World Malaria Day

- The **25th April** is designated as the 'World Malaria Day'.
- The 2021 theme of World Malaria Day is "**Reaching the Zero Malaria target**".
- It provides inspiration to the **global community and all affected countries** that are working to root out malaria and improve the health and livelihood of their people.

### Malaria

- It is caused by **protozoan parasites (Plasmodium species)**.
- It is **transmitted from one human to another** by the bite of infected Anopheles mosquitoes.
- The malaria parasite Plasmodium has a **complex, multistage life cycle** occurring within two living beings, the vector Anopheles mosquitoes and the vertebrate hosts.

### 6.23 Role of nitric oxide in fighting coronavirus

Recently, a multinational collaboration has announced the results of phase 2 clinical trials indicating that a **nitric oxide nasal spray** can be an effective viral treatment.

- The nitric oxide is known to have a **broad antimicrobial effect** against bacteria, fungi, helminths, protozoa and viruses.
- The researchers evaluated **nitric oxide's vitro antiviral effect on SARS-CoV-2 replication** and published their findings in September 2020.

### Nitric Oxide nasal spray

- It has been developed by a Vancouver-based biotech firm, **SaNOtize Research and Development Corporations**.
  - The other partners are **St Peter's hospitals, NHS Foundation Trust in**

### Surrey, and Berkshire and Surrey Pathology Services.

- The spray releases a **small, topical amount of nitric oxide** that is well known to kill viruses including SARS-CoV-2.
- It is **non-specific** and thus kills any virus.
- The patients treated with the spray saw an **average reduction of around 95% in viral load** in the first 24 hours, and more than 99% within 72 hours.
- The **self-administered nasal spray releases a small topical amount of nitric oxide** and aims to kill the virus in the upper airways, preventing it from incubating and making its way to the lungs.

### WHO clearance for nitric oxide nasal spray

- The World Health Organization has **yet to give an emergency use authorisation (EUA)**.
- **Israel and Bahrain** have given EUA to the spray, as a **medical device**.
- The developers have also **applied for EUA in the UK**.

### 6.24 Brucellosis – Four cows culled at Vithura farm

Recently, Kerala launched preventive measures after a few cases of **brucellosis**, a **zoonotic infection**, have been detected in some dairy animals.

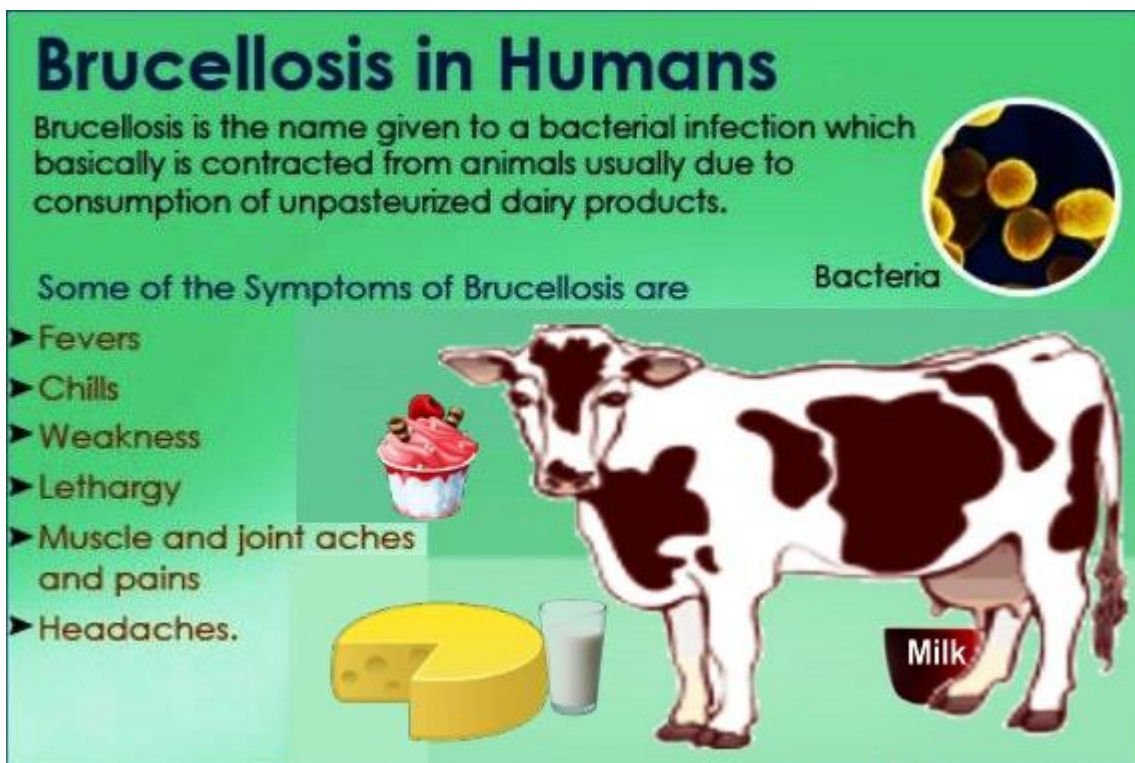
Earlier in **September 2020** **Brucella abortus S19Δ per vaccine**” was developed by the **Indian Council of Agricultural Research’s** -Indian Veterinary Research Institute (ICAR-IVRI) for brucellosis prevention in the dairy sector.

### Zoonotic Diseases

- It is a disease that **passes into the human population from an animal** source directly or through an intermediary species.
- Zoonotic infections **can be bacterial, viral, or parasitic** in nature, with animals playing a vital role in maintaining such infections.
- Examples of zoonoses include **HIV-AIDS, Ebola, Malaria**, and the current **Covid-19 disease**.



- It is a **bacterial disease** caused by various *Brucella* species, which mainly **infect cattle, swine, goats, sheep and dogs**.
- It is also known as **Malta fever or Mediterranean fever**.
- Brucellosis is **endemic in India** causing huge economic losses to dairy industry due to:
  - Infertility
  - Abortion
  - Birth of weak off springs
  - Reduced productivity



- **Infection to Humans:**
  - **Infection:**
    - Brucellosis has **infected over 3000 people in China**.
    - Humans generally **acquire the disease through:**
      - Direct contact with infected animals.
      - Eating, drinking contaminated animal products,



unpasteurized milk.

- Inhaling airborne agents.
- The **US Centers for Disease Control and Prevention** states that person-to-person transmission of brucellosis is “**extremely rare**” but some symptoms may reoccur or never go away.
- **Symptoms:**
  - **Fever, sweats, malaise, anorexia** (psychological disorder in which one eats less due to fear of weight gain), **headache and muscle pain.**
- **Treatment and prevention:**
  - It is usually **treated with antibiotics**, including rifampin and doxycycline.
  - **Avoiding unpasteurised dairy products** and taking safety precautions such as wearing rubber gloves, gowns or aprons, when handling animals or working in a laboratory can help prevent or reduce the risk of getting brucellosis.
  - Other preventive measures include **cooking meat properly, vaccinating domestic animals, etc.**

### 6.25 Russia to leave the International Space Station

 Canada	 Belgium	 Denmark	 France
 Italy	 Japan	 Netherlands	 Norway
 Russia	 Spain	 Sweden	 Switzerland
	 United Kingdom	 United States	

Recently, **Russia** has announced that it would be **withdrawing** from the **International Space Station in 2025**.

- The **Mir space station** of the former Soviet Union, and later operated by Russia, was functional from 1986 to 2001.
- The ISS has been in space since 1998, and has been known for the exemplary



cooperation between the five participating space agencies that have been running it: **NASA (United States), Roscosmos (Russia), JAXA (Japan), ESA (Europe), and CSA (Canada).**

### Reasons for leaving International Space Station

- Russia has decided to **build and manage its own floating laboratory** that will be launched into orbit by **2030**.
- The decision to leave also comes at a time when **relations between Russia and the US have been steadily deteriorating** on multiple fronts.
- The station will reportedly **orbit the Earth at a higher latitude**, enabling it to better observe the Polar Regions, especially since Russia plans to **develop the Arctic sea route as the ice melts**.
- The new station would help Russia **tide over challenges that its cosmonauts currently face on the ageing ISS**, such as conducting experiments and adapting the latest technology.

### International Space Station

- It is a **large spacecraft** which orbits around Earth in the **low earth orbit**.
- The first piece of the International Space Station was **launched in 1998** launched by a Russian rocket.
- It has science labs from the **United States, Russia, Japan and Europe**.
- It serves as a **microgravity and space environment research laboratory** in which scientific research is conducted in astrobology, astronomy, meteorology, physics, and other fields.
- The station is divided into two sections i.e. **the Russian Orbital Segment (ROS)** is operated by Russia, while **the United States Orbital Segment (USOS)** is run by the United States as well as many other nations.

### Purpose of Space Station

- A space station is essentially a large spacecraft that **remains in low-earth orbit for extended periods of time**.
- It is like a large laboratory in space, and allows astronauts to **come aboard and stay for weeks or months to carry out experiments** in microgravity.



### 6.26 Zhurong: China's first Mars Rover

Recently, the China National Space Administration has announced that it will name its **first Mars rover** as 'Zhurong'.

- In 2019, China became the **first country to land a space probe on the little-explored far side of the moon** and in December returned lunar rocks to Earth for the first time.
- China would become the **third country** after the former Soviet Union and the United States to **put a robot rover on Mars**.

#### Zhurong

- It is **China's first Mars rover** aboard the **Tianwen-1 probe** that arrived in Mars orbit in February 2020.
- It is named after a **traditional fire god**.
- The rover is part of Chinese space plans that include **launching a crewed orbital station and landing a human on the moon**.
- The rover's title fits with the **Chinese name for Mars** i.e. "**Huo Xing**" or fire star.
- The top candidate for the landing site is **Utopia Planitia**, a rock-strewn plain where the **U.S. lander Viking 2 touched down in 1976**.

#### Tianwen-1

- Its goals include analysing and mapping the **Martian surface and geology, looking for water ice and studying the climate and surface environment**.
- It is named after the ancient Chinese poem '**Questions to Heaven**'.
- It is an **all-in-one orbiter, lander and rover** which will search the Martian surface for water, ice, investigate soil characteristics, and study the atmosphere, among completing other objectives.
- It lifted off on a **Long March 5 rocket, a launch system developed by the China Academy of Launch Vehicle Technology (CALT)**, from the Wenchang launch centre.
- It will be the **first to place a ground-penetrating radar on the Martian surface**, which will be able to study local geology, as well as rock, ice, and dirt distribution.

### 6.27 Harlequin Ichthyosis

Recently, Odisha has reported its first-ever case of a baby born with **Harlequin Ichthyosis** at a hospital in Berhampur in the state's Ganjam district.

- It is a **severe genetic disorder** that mainly **affects the skin**.
- The newborn infant is covered with **plates of thick skin that crack and split apart**.
- The thick plates can pull at and **distort facial features** and can restrict breathing and eating.

#### Cause of Harlequin Ichthyosis

- It is caused by mutations in the **ABCA12 gene**.
- **Ra** The **ABCA12 gene provides instructions for making a protein** that is essential for the normal development of skin cells.
- The protein plays a major role in the **transport of fats (lipids) in the outermost layer of skin (the epidermis)**.
- A loss of functional ABCA12 protein **disrupts the normal development of the epidermis**, resulting in the hard, thick scales characteristic of harlequin ichthyosis.

#### Inheritance of Harlequin Ichthyosis

- It is inherited in an **autosomal recessive pattern**, which means both copies of the gene in each cell have mutations.
- The parents of an individual with an **autosomal recessive condition each carry one copy of the mutated gene**, but they typically do not show signs and symptoms of the condition.

### 6.28 Drug for common bowel disorder found to blunt Covid-19 vaccine response

Recently, the authors of a large-scale study found out that people who take a commonly-prescribed drug for **inflammatory bowel disease (IBD)** should not assume they are **protected after a first dose of Covid-19 vaccine**.

- The research measured antibody responses after **vaccination with the Pfizer-**

**BioNTech or the Oxford-AstraZeneca** Covid-19 vaccine in 865 people treated with infliximab.

- The research highlighted that **by suppressing the immune system**, the Anti-TNF drugs can **reduce vaccine effectiveness** and increase risk of serious infection.
- The research found that **people treated with infliximab had significantly lower concentrations of antibodies**, when compared to 428 people on an alternative treatment, vedolizumab.
- After a single dose of vaccine, **only about one-third of participants treated exclusively with infliximab generated adequate levels of antibodies** to the virus for the vaccine to be considered effective.

### Common bowel disorder

- It is an **umbrella term** used to describe disorders that involve **chronic inflammation of the digestive tract**.
- The **two main forms** of inflammatory bowel disease (IBD) are ulcerative colitis and Crohn's disease.
  - **Ulcerative colitis:** It involves inflammation and sores (ulcers) along the superficial lining of your large intestine (colon) and rectum.
  - **Crohn's disease:** It is characterized by inflammation of the lining of your digestive tract, which often can involve the deeper layers of the digestive tract.
- The symptoms include **urgent and frequent bloody diarrhoea, weight loss, pain, and extreme fatigue**.

### Infliximab

- It is an **anti-tumour necrosis factor (anti-TNF) biologic drug**, prescribed to around two million people worldwide.
- One of the brand names under which infliximab is marketed is **Remicade**, which has got **regulatory clearance in India**.
- The Anti-TNF drugs are **effective treatments for immune-mediated inflammatory diseases**.



## 6.29 NavIC (Navigation with Indian Constellation)

Recently, the **National Telecommunications Institute for Policy Research, Innovation and Training (NTIPRIT)** has conducted webinar on “**NavIC: Opportunities for the Telecom Industry**”.

- It is jointly conducted by **NTIPRIT in collaboration with ISRO and Telecom Industry.**
- The NRIPRIT has highlighted that there are plans to make **NavIC available on L-1 band** in addition to the **presently used L-5 band.**

### NavIC

- It is an **autonomous regional satellite navigation system** established and maintained by **ISRO.**
- It is also known as **Indian Regional Navigation Satellite System (IRNSS).**
- It covers India and a **region extending up to 1500 km** beyond Indian mainland (primary coverage area).
- It provides **position accuracy better than 20 m (20)** and **timing accuracy better than 50 ns (20).**
  - The actual measurements demonstrate **accuracy better than 5 m and 20 ns** respectively.
- NavIC based applications are being used in various civilian sectors, including, **transport, map applications, and timekeeping.**
- NavIC is an **indigenous positioning system** that is under Indian control.
- The **three satellites are located** in suitable orbital slots in the **geostationary orbit** and the remaining **four are located in geosynchronous orbits.**

### NTIPRIT

- It is the **apex training institute** of Department of Telecommunications.
- It was established in the year 2010 as **National Telecom Academy.**
- It is involved in conduction of **induction Training for probationary officers** of Indian Telecommunication Service Group A (ITS Group A).



- It conducts various **In-Service Trainings, Management Development Programmes, Regional and International Trainings, Capacity Building workshops** for Officers of Government of India in various aspects of IT.

### 6.30 Python-5 Missile

Recently, the **Defence Research & Development Organization (DRDO)** has conducted the maiden trial of **Python-5 Missile from Tejas aircraft.**

#### Python-5 Missile

- It is **5th generation Air-to-Air Missile (AAM).**
- It can be launched from **very short to beyond visual ranges** with greater kill probability, excellent resistance to countermeasures, irrespective of evasive target maneuvers or deployment of countermeasures.
- The missile comes with a **5G imaging seeker.**
- It provides “**full sphere launch capability**” with **lock-on-after-launch** and excellent acquisition and targeting capabilities.
- It is manufactured by **Rafael Advanced Defense Systems (Israel).**
- The trial was aimed to **validate enhanced capability** of the already integrated **Derby Beyond Visual Range (BVR) AAM on Tejas.**
- It is the **most accurate and reliable AAM of the Israeli Air Force** and one of the most sophisticated guided missiles in the world.

#### Features of Python-5 Missile

- It incorporates the **aerodynamic airframe of the Python-4 missile** and also retains the **inertial navigation system (INS), rocket motor, warhead and proximity fuse** of its predecessor.
- It is a **dual use missile** suitable for **air-to-air and surface-to-air missions.**
- It integrates a **fifth-generation imaging seeker, modern software, advanced infrared counter-countermeasure (IRCCM) and flight control systems.**
- It features a **new electro-optical infrared seeker** with high off-boresight capability.



### 6.31 Oldest Water on Earth

Recently, a **2016 study by Canadian geologists** is eliciting significant interest, for the clues it offers in the **search for alien life**, especially on the Red Planet 'Mars'.

#### Key Highlights

- The discovery of the **water 2.4 km below the Earth's surface** has been heralded as one of great importance, given its ramifications on what we know about the origin and evolution of our planet.
- The investigations into the **highly saline water led to a pathbreaking discovery** as scientists found **chemolithotrophic microbes** in the water discovered at Kidd Creek mine.
  - The **chemolithotrophic microbe is a bacteria** that can thrive in the most extreme surroundings.
- The researchers found that the **microbes had been feeding on nitrogen and sulphate**.
  - It bore **resemblance to ocean beds** that are known to support similar such extreme life forms.

#### Oldest Water on Earth

- **Sherwood Lollar** had been carrying out research at the **Kidd Creek mine since 1992**.
- The Kidd Creek mine is **located on the 2.7 billion-year-old Canadian Shield** which is one of the **world's largest continental shields**.
  - It implies the **oldest and least tectonically active parts** of the Earth's crust.
- It was on an **expedition in 2009** that a musty smell led Sherwood Lollar to make the crucial discovery.
- The water discovered from Kidd Creek mine was **highly saline** i.e. ten times saltier than the sea water.

#### Relation between oldest water on earth and life on Mars

- The researchers believe that the Canadian Shield is the **closest analogue on Earth**



to the subsurface of Mars, which suffers the least from plate tectonic activity.

- The scientists argue that if **life-supporting water can be found 2.4 km below the Earth**, it may be possible that the same could be true in the case of the Red Planet.
- It provides an **impetus for missions like Perseverance**, which are looking for signs of present or past life on Mars.

### Kidd Creek mine

- The **Kidd Creek copper/zinc mine** is located near Timmins in **Ontario, Canada**.
- It produces **indium, silver-bearing slimes, nickel-copper carbonate, liquid SO<sub>2</sub> and sulphuric acid** along with copper and zinc.
- It is based on a **rich, steeply dipping volcanogenic sulphide deposit** located in the **Archaean Abitibi greenstone belt**.

### 6.32 China launches first module of new space station

Recently, **China** has launched a key module of a **new permanent space station** i.e. the **Tianhe module**.

#### Tianhe Module

- It was launched from the **Wenchang Space Launch Centre** on a **Long March-5B rocket**.
- China has sent two previous space stations into orbit i.e. **the Tiangong-1 and Tiangong-2** were trial stations.
  - The new, 66-tonne, **multi-module Tiangong station is set to be operational for at least 10 years** and Tianhe is the core component of it.
- Tianhe Module is **16.6m long and 4.2m wide**.
  - It will **provide power and propulsion and contains the life support technologies and living quarters** required by visiting astronauts.
- The launch begins the **first of 11 missions necessary to complete, supply and crew the station** by the end of next year.
- The core module will provide **living space for as many as six astronauts** during crew changeovers,



- The other two modules, **Wentian** or “**Quest for the Heavens**” and **Mengtian** or “**Dreaming of the Heavens**” will provide room for conducting scientific experiments including in medicine and the properties of the outer space environment.

### China wants to build a new space station

- China hopes to have the **new station operational by 2022**.
- The only space station currently in orbit is the **International Space Station**, from which **China is excluded**.
- China has been a **late starter when it comes to space exploration** as it was only in 2003 that it sent its first astronaut into orbit, making it the third country to do so, after the Soviet Union and the US.
- The **ISS is due to be retired after 2024**, which could potentially leave Tiangong as the only space station in Earth’s orbit.

## SOCIAL ISSUES AND DEVELOPMENT

### 7.1 Pradhan Mantri Awaas Yojana-Gramin

Due to adverse impact of **Covid-19**, **only 5.4% of the sanctioned houses under** the central government’s flagship rural housing scheme, **Pradhan Mantri Awaas Yojana-Gramin**, have **reached completion for the year 2020-2021**.

- **Launch:** To achieve the objective of “**Housing for All**” by **2022**, the erstwhile rural housing scheme **Indira Awaas Yojana (IAY)** was **restructured to Pradhan Mantri Awaas Yojana-Gramin (PMAY-G)** w.e.f 1<sup>st</sup> April, 2016.
- **Ministry Involved:** Ministry of **Rural development**.
- **Aim:** To **provide a pucca house with basic amenities to all rural families**, who are homeless or living in kutcha or dilapidated houses by the end of **March 2022**.
  - To help rural people Below the Poverty Line (BPL) in construction of dwelling units and upgradation of existing unserviceable kutcha houses by providing assistance in the form of a full grant.
- **Beneficiaries:** People belonging to SCs/STs, freed bonded labourers and

non-SC/ST categories, widows or next-of-kin of defence personnel killed in action, ex servicemen and retired members of the paramilitary forces, disabled persons and minorities.

- **Selection of Beneficiaries:** Through a three stage validation – Socio Economic Caste Census 2011, Gram Sabha, and geo-tagging.
- **Cost Sharing:** The cost of unit assistance is shared between Central and State Governments in the ratio **60:40 in plain areas** and **90:10 for North Eastern and hilly states**.
- **Features:**
  - The minimum size of the house has been increased to 25 sq.mt (from 20sq.mt) with a hygienic cooking space.
  - The unit assistance has been increased from Rs. 70,000 to Rs. 1.20 lakh in plain and from Rs. 75,000 to Rs. 1.30 lakh in hilly states.
  - The assistance for construction of toilets shall be leveraged through convergence with **Swachh Bharat Mission-Gramin (SBM-G)**, **MGNREGS** or any other dedicated source of funding.
  - Convergence for **pipd drinking water, electricity connection, LPG gas connection etc.** different Government programmers are also to be attempted.

- **Performance of the Scheme:**

- **Only 55% of the construction** target has been completed.
  - Of the **2.28 crore houses to be built** for the rural poor, less than **1.27 crore had been built** by January 2021.
- **Money** has been sanctioned to **almost 85% of beneficiaries**.
- This scheme has helped in **employment generation**. Many states provided employment to their migrant labourers during lock down.

### **Pradhan Mantri Awas Yojana – Urban**

- **Launch:** 25<sup>th</sup> June 2015, intends to provide housing for all in urban areas by year 2022.



- **Implemented by:** Ministry of **Housing and Urban Affairs**
- **Features:**
  - **Addresses Urban housing shortage among the Urban Poor** including the Slum Dwellers by ensuring a pucca house to eligible urban poor.
  - The Mission **covers the entire urban area** consisting of Statutory Towns, Notified Planning Areas, Development Authorities, Special Area Development Authorities, Industrial Development Authorities or any such authority under State legislation which is entrusted with the functions of urban planning & regulations.
  - All houses under PMAY(U) **have basic amenities like toilet, water supply, electricity and kitchen.**
  - The Mission **promotes women empowerment** by providing the ownership of houses in the name of female members or in joint name.
  - **Preference is also given to differently abled persons, senior citizens, SCs, STs, OBCs, Minority, single women, transgender** and other weaker & vulnerable sections of the society.
- **Divided into Four Verticals:**
  - In-situ Rehabilitation of existing slum dwellers using land as a resource through private participation.
  - Credit Linked Subsidy.
  - Affordable Housing in Partnership.
  - Beneficiary-led individual house construction/enhancement.

## 7.2 Integrated Health Information Platform (IHIP)

Recently, the Union Minister of Health & Family Welfare has launched the **Integrated Health Information Platform (IHIP)**.

- The **accurate, reliable and timely information is crucial** for a country such as India which has a population of 1.35 billion.
- India's information system for **precision public health** is essential for delivering the right intervention at the right time, every time to the right population.



- The use of technology to **enhance precision in public health**, including the use of pathogen genomics, enhanced surveillance and informatics, and targeted interventions has steadily gone up.

### **Integrated Health Information Platform (IHIP)**

- The new version of IHIP will **house the data entry and management** for India's disease surveillance program.
- It is termed as the **world's biggest online disease surveillance platform**.
- It is a **web-enabled near-real-time electronic information system** that is embedded with all applicable Government of India's e-Governance standards, Information Technology (IT), data & meta data standards.
- It aims to provide **state-of-the-art single operating picture** with geospatial information for managing disease outbreaks and related resources.
- The **key features** of Integrated Health Information Platform (IHIP)



- Real time data reporting (along through mobile application); accessible at all levels (from villages, states and central level)
- Advanced data modelling & analytical tools
- GIS enabled Graphical representation of data into integrated dashboard
- Role & hierarchy-based feedback & alert mechanisms
- Geo-tagging of reporting health facilities
- Scope for data integration with other health programs

### **Significance of Integrated Health Information Platform (IHIP)**

- It shall ensure **near-real-time data in digital mode**, having done away with the paper-mode of working in addition to **tracking 33 diseases** now as compared to the earlier 18 diseases.
- The refined IHIP with automated data will help in a big way in **real time data collection, aggregation & further analysis of data**.
- It will provide health information system developed for **real time, case-based information, integrated analytics and advanced visualization capability**.
- It can easily be **integrated with other ongoing surveillance program**, while



having the feature of addition of special surveillance modules.

- It will provide **analyzed reports on mobile or other electronic devices**.
- An advanced digital platform for **scouting the earliest signs of disease spread in the smallest of villages and blocks** in the country will immensely help in nipping in the bud any potential outbreak or epidemic.

### 7.3 Pradhan Mantri Kaushal Vikas Yojana (PMKVY)

Recently, the Ministry of Skill Development and Entrepreneurship (MSDE) conducted a **first-of-its-kind regional workshop** for **Pradhan Mantri Kaushal Vikas Yojana (PMKVY) 3.0** in Gangtok, Sikkim.

- The key personnel of **State Skill Development Missions (SSDMs) and District Skill Committees (DSCs) across all eight states** – Sikkim, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram Nagaland and Tripura participated.
- The workshop is aimed at **learning from the best practices, understanding the challenges related to PMKVY 3.0**, and building understanding about using technical platform – Skill India Portal (SIP).
- The workshop was conducted with a vision to **empower the youth of North Eastern Region (NER) with industry-relevant skills** to enhance their productivity and contribute to the economy.

#### PMKVY

- It is the **flagship scheme** of the Ministry of Skill Development & Entrepreneurship (MSDE).
- It is implemented by **National Skill Development Corporation (NSDC)**.
- Its objective is to enable a large number of **Indian youth to take up industry-relevant skill training** that will help them in securing a better livelihood.

#### Key Components of PMKVY

- **Short-term Training:** Under PMKVY there are various Training Centers (TCs) that provide training in areas, such as entrepreneurship, soft skills, and financial and digital literacy.
  - The training programs come under National Skills Qualification



Framework (NSQF).

- The time duration of the training program is usually between 150 – 300 hours.
- **Recognition of Prior Learning (RPL):** It refers to an assessment process used to evaluate an individual's existing skill set, knowledge and experience gained either by formal or informal learning.
- **Special Projects:** Under special projects component, training is provided in special areas or premises of Government bodies, industry bodies and corporate offices.
  - The training will be provided in the special job roles which are not defined under available Qualification Packs (QPs)/National Occupational Standards (NOSs).
- **Kaushal and Rozgaar Mela:** It is conducted by Training Partners every 6 months with media coverage.
  - PMKVY gives importance to the involvement of the target beneficiaries through a definite mobilisation process.
  - It is essential for Training Partners to actively participate in National Career Service Melas and on-ground activities.
- **Placement Assistance:** PMKVY's training partners provide placement opportunities to individuals certified under this scheme.
  - The training partners should also provide support for the development of entrepreneurs.

### Implementation of PMKVY

- **Centrally Sponsored Centrally Managed (CSCM):** It is implemented by National Skill Development Corporation.
  - 75% of the PMKVY 2016-20 funds and corresponding physical targets have been allocated under CSCM.
- **Centrally Sponsored State Managed (CSSM):** It is implemented by State Governments through State Skill Development Missions (SSDMs).
  - 25% of the PMKVY 2016-20 funds and corresponding physical targets have been allocated under CSSM.



## Additional Information

### Skill India Mission

- It is an initiative launched by the Government in 2015 to **train over 40 crore Indians** in different industry-related jobs.
- The vision is to create an **empowered workforce by 2022** with the help of various schemes and training courses.
- The Skill India scheme is a smart initiative that works toward the **development of the country as a whole**.

### National Skill Development Corporation (NSDC)

- It is a **not-for-profit public limited company** incorporated in 2008 under section 25 of the Companies Act, 1956.
- It was set up by **Ministry of Finance** as **Public Private Partnership (PPP) model**.
- The Government of India through **Ministry of Skill Development & Entrepreneurship (MSDE)** holds **49% of the share capital** of NSDC, while the private sector has the balance 51% of the share capital.
- It aims to promote skill development by **catalyzing creation of large, quality and for-profit vocational institutions**.

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### 7.4 Aahaar Kranti

Recently, the Union Minister of Health & Family Welfare has announced that the **Ministry of Science & Technology** will launch 'Aahaar Kranti'.

- It is a **joint movement** of **Vijnana Bharati (Vibha)** and **Global Indian Scientists' and Technocrats' Forum (GIST)**.
  - The Council of Scientific and Industrial Research (CSIR)'s **Pravasi Bharatiya Academic and Scientific Sampark (Prabhaas)** is also collaborating.
- It is a mission with the motto of '**Uttam Aahaar Uttam Vichaar**' or '**Good Diet-Good Cognition**'.
- The United Nations has also declared 2021 as the **International Year of Fruits**



**and Vegetables**, which vibes very well with Aahaar Kranti.

- The programme will focus on **training teachers, who, in turn, will pass on the message to the multitudes of students**, and through them to their **families and finally the society at large**.

### Need for Aahaar Kranti

- It is designed to address the **peculiar problem being faced by India** and the world called '**hunger and diseases in abundance**'.
  - The root cause of the above strange phenomenon is a **lack of nutritional awareness in all sections** of our society.
- There is a need for a **nutritionally balanced diet** also in the context of the current COVID-19 pandemic.
- A healthy body would be able to **handle the infection much better with greater immunity and higher resilience**.
- The **UN sustainable goal 3 (SDG-3)** that emphasizes on human well-being reads, "Ensure healthy lives and promote well-being for all at all ages."
- India has the unique advantage of having the **knowledge of Ayurveda** and it is time to also apply this rich knowledge of Ayurveda-based nutrition to practice.

### Significance of Aahaar Kranti

- The movement proposes to **address the current situation of hunger in abundance** by working to rouse the people to the values of India's traditional diet.
- It will renew the **focus on nutritionally balanced diets** (Uttam evam santulit aahaar) replete in locally sourced fruits and vegetables.
- The Vibha and GIST have aimed to set **Aahaar Kranti as a model for the entire world to follow**.

### Objectives of Aahaar Kranti

- It will seek to **promote better awareness, better nutrition and better agriculture**;
- The messages will be **imparted through the curriculum in the form of 'what's and 'why's of nutrition**, or through the forms of games or as instructions such as



'how to'; and

- The content will be provided both online and offline and in **all vernacular languages besides English and Hindi** to reach out to as many as possible.

## 7.5 Poshan Gyan

Recently, the Chairman of NITI Aayog has launched '**Poshan Gyan**'.

### Poshan Gyan

- It is a **national digital repository on health and nutrition**.
- It is joint initiative of **NITI Aayog, Bill and Melinda Gates Foundation** and **Centre for Social and Behaviour Change, Ashoka University**.
- It was **conceptualized as a resource, enabling search of communication materials on 14 thematic areas of health and nutrition** across diverse languages, media types, target audiences and sources.
- The content for the repository was sourced from the **Ministries of Health and Family Welfare and Women and Child Development** and developmental organizations.
- The website provides an **intuitive interface** such as multi-parametric search, multiple downloads at a point in time, easy sharing of materials via social media and easy viewing on any type of smartphone.

### Significance of Poshan Gyan

- The repository introduces a **unique crowdsourcing feature that allows anyone to submit communication material** for inclusion on the website, followed by a review by a designated committee.
- It is a collection of **effective communication materials created by government agencies** and other development organizations to tackle the challenges of knowledge awareness and behaviour change.
- It contains materials **targeted towards different audiences using a variety of media types**, such as interpersonal communication, mass media, outdoor advertising etc.



### Why Poshan Gyan is needed in India?

- The high malnutrition persists despite **India being a food-surplus nation, which points towards a clear need** for behavioural change.
- It is **needed to address the nutritional challenge by targeting those especially vulnerable**, such as pregnant women, lactating mothers and children below the age of 6 years.

### 7.6 Gender Samvaad

Recently, the **Ministry of Rural Development** has launched a platform called '**Gender Samvaad**'.

#### Gender Samvaad

- It is a joint initiative of **Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM)** and the **Initiative for What Works to Advance Women and Girls in the Economy (IWWAGE)** at LEAD.
- It is a unique platform to establish a **shared platform to generate awareness on NRLM's gender interventions** across the country, with a focus on hearing voices from the states and of SHG members.
- It is a **bi-monthly webinar** which will provide states with opportunities to exchange knowledge on how to:
  - Improve women's agency,
  - Share international experiences of successful gender interventions,
  - Unpack implementation barriers in gender mainstreaming,
  - Create a 'gender knowledge repository' with resources to design and implement gender interventions across the country.
- The Gender Samvaad webpage is an **open knowledge repository**, hosted by IWWAGE.
  - It will include case studies and good practices to **build advocacy focusing on gender issues** across State Rural Livelihoods Mission (SRLMs) and the NRLM.



- It hopes to create a **shared platform to spotlight gender interventions across the subcontinent** with a focus on listening to voices from the states and of Self Help Group members.

### **Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM)**

- It is a flagship scheme of the **Ministry of Rural Development**.
- It aims to **address multi-dimensional poverty** through building strong institutions for the poor.
- It is a **centrally sponsored programme** that aims at **eliminating rural poverty** through promotion of multiple livelihoods for the rural poor households across the country.

### **Initiative for What Works to Advance Women and Girls in the Economy (IWWAGE)**

- It is an **initiative of LEAD**, an action-oriented research centre of IFMR Society.
- It aims to build on **existing research and generate new evidence to inform and facilitate** the agenda of women's economic empowerment.
- It is an **action-oriented research centre of IFMR Society** (a not for profit society registered under the Societies Act).
- It is **supported by the Bill & Melinda Gates Foundation**.

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### **7.7 Reforms in the National Pension System (NPS)**

Recently, the **Pension Fund Regulatory and Development Authority (PFRDA)** chairman Supratim Bandyopadhyay has said that limit on funds under **National Pension system (NPS)** at the time of retirement will be revised to ₹5 lakh.

- The NPS was started as the **New Pension Scheme** for government employees in 2004 under a new regulator called the **Pension Fund Regulatory and Development Authority (PFRDA)**.
- It has been **open for individuals from all walks of life** to participate and build a retirement nestegg.
- The NPS has been **gradually growing in size and now manages ₹ 5.78 crore of savings and 4.24 crore accounts** in multiple savings schemes.



### Changes planned by PFRDA

- The law regulating the NPS **allows members to withdraw just 60% of their accumulated savings** at the time of retirement.
- It is **mandatory to buy an annuity product** with the remaining 40% that provides a fixed monthly income to retirees till their demise.
- The members who **accumulate up to ₹ 2 lakh in their NPS account** at the time of retirement are exempted from the mandatory annuitisation, and can withdraw the full amount.
- The regulator has decided that the **annuity purchase stipulation for 40% of members' retirement corpus** should be dropped altogether.

### Reasons for overhauling National Pension System

- The **falling interest rates and poor returns offered by annuity products** had triggered complaints from some members and experts about the compulsory annuitisation clause.
- Since **annuities are taxable**, deducting the tax and factoring in the inflation means **annuities are yielding negative returns**.
- The regulator has now proposed to **give members a choice to retain 40% of their corpus** with the NPS fund managers even after retirement.
- It will **allow members to get better returns, and these savings can be paid out to members over 15 years** through something like the systematic withdrawal plan offered by mutual funds.

### National Payment System

- It is a **pension cum investment scheme** launched by Government of India to **provide old age security to Citizens of India**.
- It brings an **attractive long term saving avenue** to effectively plan your retirement through safe and regulated market-based return.
- The **National Pension System Trust (NPST)** established by PFRDA is the **registered owner of all assets** under NPS.
- NPS account can be **opened only in individual capacity** and cannot be opened or operated jointly or for and on behalf of HUF.





### Eligibility under National Pension System

- **Any individual citizen of India (both resident and Non-resident)** in the age group of **18-65 years** (as on the date of submission of NPS application) can join NPS.
- The **OCI (Overseas Citizens of India) and PIO (Person of Indian Origin)** card holders and **HUFs** are **not eligible** for opening of NPS account.

### 7.8 Maharashtra's two-child norm for government employees

Recently, a woman officer from the **Maharashtra Prison Department** was dismissed from service after an inquiry revealed that she violated the **Maharashtra Civil Services (Declaration of Small Family) rules** because she suppressed the information from the authorities that she has three children.

- The Maharashtra Civil Services (Declaration of Small Family) Rule of 2005 defines a **small family as wife, husband and two children**.
- The rule stipulates that a **person is not eligible for a job with Maharashtra Government** if he or she has more than two children after 2005.
- Maharashtra is one of the few states in the country that have a '**two children' policy for appointment in government jobs** or even for the elections of some local government bodies.
  - The other states such as **Rajasthan, Madhya Pradesh, Andhra Pradesh and Telangana, Gujarat, Odisha, Uttarakhand and Assam** being the latest addition to the list in 2019.
- The rules mandate filing a **small family declaration at the time of applying** for a government job.
  - The definition of child under these rules **does not include adopted children**.
- The rules make the **Small Family norm an additional essential requirement** for Groups A, B, C, D of Maharashtra government employees.
- A person having **more than two children on the date commencement of the rule shall not be disqualified** for appointment under these provisions so long as the

number of children on the date of such commencement does not increase.

- It provided that **one or more than one children are born in a single delivery** within an year of the commencement, **shall not be considered for the disqualification of the rules.**
- The rules also empower the **state government to give relaxation in ‘just and reasonable’** manner and mandates recording such reasons.

### 7.9 TRIFED joins hands with The LINK Fund for tribal development

Recently, the **TRIFED and The LINK Fund** have entered into a Memorandum of Understanding (MoU) for **tribal development.**

#### Key Highlights

- The MoU is aimed at **employment generation by providing support to tribals** for increasing value addition in their produce and products.
- It has called for **sustainable livelihoods and value addition for increase** in income and employment generation through technological intervention for efficiency in value addition for MFPs.
- Both the organizations will also work together to **creating women-centered infrastructure** and innovation and entrepreneurship.
- The LINK Fund is excited to **commence the intervention working in close coordination with TRIFED’s leadership team** and to draw out Detailed Project Implementation Plan, Estimate budgetary estimates for impactful interventions and to mobilize funds etc.
- The aim of MoU is to **pooling strengths together and undertakes work** that will help in boosting the income and livelihoods of the tribal people.

#### The Link Fund

- It is a **practitioner-led fund** headquartered in **Geneva, Switzerland.**
- It works to **end extreme poverty** and mitigate the effects of climate change.
- It bridges the **gap between the financial and philanthropic worlds**, providing an optimal solution both to funding and implementing integrated development



programs.

- The Fund addresses **basic human needs** – food and nutrition security, education, women's economic empowerment and large-scale infrastructure.

### TRIFED

- The **Tribal Cooperative Marketing Development Federation of India (TRIFED)** came into existence in 1987.
- It is a **national-level apex organization** functioning under the administrative control of **Ministry of Tribal Affairs**.
- The ultimate objective of TRIFED is **socio-economic development of tribal people** in the country by way of marketing development of the tribal products on which the lives of tribals depends heavily.

## ENVIRONMENT

### 8.1 Forest Fire in Bandhavgarh National Park

Recently, a wildfire that had spread across several zones in **Bandhavgarh National Park** has been brought under control.

- It is located in the **Vindhya Hills** of the Umaria district in **Madhya Pradesh**.
- It is known for the **Royal Bengal Tigers**.
- It was declared as a **national park in 1968**.
- The name Bandhavgarh has been derived from the most **prominent hillock of the area of Umaria**.
- It consists of mixed vegetation ranging from **tall grasslands to thick Sal forest**.
- It resides on the **extreme north eastern border of Madhya Pradesh** and the **northern edges of the Satpura mountain ranges**.

### 8.2 Pollution Control Boards to Increase Capacity – NGT Orders

Recently, the **National Green Tribunal (NGT)** directed the Haryana State Pollution Control Board (HSPCB) to strengthen its capacity and the **Central Pollution Control Board (CPCB)** to form a uniform recruitment criteria.



- The order was to **ensure better monitoring for improved compliance of environmental norms.**
- Earlier in January 2021, the **Supreme Court (SC)** had taken suo motu cognizance of pollution of water bodies by **untreated sewage in Haryana.**
  - **The Plea:**
    - In 2018, a case was filed with NGT's principal bench for revising existing monitoring mechanism by State Pollution Control Boards (SPCBs).
      - This included an interval of mandatory inspections of **highly polluting** industries and policy for auto renewal of **Consent to Operate (CTO)** certificate under **Water (Prevention and Control of Pollution) Act, 1974** as well as the **Air (Prevention and Control of Pollution) Act, 1981.**
    - The plea pointed out that an earlier report of the **Central Ground Water Board (CGWB)** had established **deterioration of the ground water quality in Haryana.**
    - The **Comptroller and Auditor General (CAG)** of India's 2016 report also recorded operation of several projects without valid consent to establish or CTO certificates, showing ineffectiveness of monitoring mechanism.
  - **NGTs Action:**
    - The NGT passed an order for the Haryana government to revisit its inspection policy and make it adequate to ensure effective enforcement of law.
  - **Haryana's Proposal:**
    - The Haryana government, in compliance to the NGT order, proposed a revised policy with increased frequency of inspection, installation of online monitoring devices to capture real-time data and pre-verification of documents before issuing renewal.
- **Current Order:**

- Inspection at **higher frequencies**.
  - **Capacity enhancement** of SPCBs/**Pollution Control Committees (PCCs)** with **consent funds**.
  - Capacity enhancement of CPCB utilising **environment compensation funds**.
  - **Annual performance audit** of state PCBs/PCCs.
  - **CPCB to prepare a format** containing qualifications, minimum eligibility criteria and required experience for key positions.
  - **Significance:**
    - In the name of 'ease of doing business', powers and authorities of SPCB have been compromised. The latest judgement of NGT is a **fresh start to the long-delayed initiative of strengthening CPCB/SPCBs/PCCs**.
    - The judgment of NGT could be termed as landmark. The **NGT has tried to erase the bottlenecks, which were being used to halt the strengthening of environmental regulation**.
    - The important part of the judgement is asking **CPCB to come out with standard recruitment rules** which can be followed by all states. The existing SPCBs recruitment rules have not been updated for decades.
- Note**
- **CPCB:**
    - CPCB is a **statutory organisation** which was constituted in September, 1974 under the **Water (Prevention and Control of Pollution) Act, 1974**.
    - It was entrusted with the powers and functions under the **Air (Prevention and Control of Pollution) Act, 1981**.
    - It serves as a field formation and also provides technical services to the Ministry of Environment and Forests and Climate Change of the provisions of the **Environment (Protection) Act, 1986**.
  - **SPCB:**
    - They supplement the CPCB as they are a statutory organization entrusted to implement Environmental Laws and rules within the jurisdiction of a



state.

- **Environment Compensation:**
  - Environmental compensation is a policy instrument for the protection of the environment which works on the 'Polluter Pays Principle'.
- **Environment Compensation Fund:**
  - It is a **specialised type of fund** collected by **charging the environmental violations**.
    - **Example:** Illegal discharge in water bodies.

### 8.3 Frequent Forest Fires in India

Recently, Uttarakhand has witnessed over 1,000 incidents of forest fire over the last six months, including 45 in the last 24 hours alone.

#### Incidents of Forest Fires in India

- The January month saw **prolonged fires in Uttarakhand, Himachal Pradesh (Kullu Valley) and Nagaland-Manipur border (Dzukou Valley)**.
- The **Simlipal National Park in Odisha** saw a major fire between February-end and early March.

#### Why Indian Forests are prone to fire?

- According to the India State of Forest Report 2019 (ISFR), about **21.67% (712,249 sq km)** of the country's geographical area is **identified as forest**.
  - The **tree cover** makes up another **2.89% (95, 027 sq km)**.
- The Forest Survey of India (FSI) has stated that the **forests of the Northeast and central India regions are the most vulnerable areas** to forest fires.
  - The forests in **Assam, Mizoram and Tripura** have been identified as '**extremely prone**' to forest fire.
  - The states with **large forest areas** under the '**very highly prone**' category include Andhra Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Maharashtra, Bihar and Uttar Pradesh.

- The **Western Maharashtra, Southern Chhattisgarh** and areas of **Telangana and Andhra Pradesh**, along with central **Odisha**, are turning into **‘extremely prone’ forest fire hotspots**.
- The areas under the **‘highly prone’ and ‘moderately prone’ categories** make up about **26.2% of the total forest cover**.

### Causes of Forest Fires

- It can be caused by a number of natural causes, but officials say many major fires in India are **triggered mainly by human activities**.
- The emerging studies **link climate change to rising instances of fires globally**, especially the massive fires of the Amazon forests in Brazil and in Australia in the last two years.
- The **fires of longer duration, increasing intensity, higher frequency and highly inflammable nature** are all being linked to climate change.
- In India, forest fires are most commonly reported during March and April, when the **ground has large quantities of dry wood, logs, dead leaves, stumps, dry grass and weeds**.
- Under natural circumstances, **extreme heat and dryness, friction created by rubbing of branches** with each other also have been known to initiate fire.

### Forest fires difficult to control – Why?.

- The **locality of the forest and access to it pose hurdles** in initiating firefighting efforts.
- The **timely mobilisation of forest staff, fuel and equipment, depending on the type of fire**, through the thick forests remain challenges.
- It is **impossible to transport heavy vehicles** loaded with water into the thick forests.
- The **wind speed and direction play a critical role** in bringing a forest fire under control.

### What factors make forest fires a concern?

- The forests play an important role in **mitigation and adaptation to climate change** and they act as a sink, reservoir and source of carbon.





- In India, with **1.70 lakh villages in close proximity to forests** (Census 2011), the livelihood of several crores of people is dependent on fuelwood, bamboo, fodder, and small timber.
- The forest fires can have **multiple adverse effects on the forest cover, soil, tree growth, vegetation**, and the overall flora and fauna.
- The **fires render several hectares of forest useless** and leave behind ash, making it unfit for any vegetation growth.
- The **soil quality decreases** with the alteration in their compositions and soil moisture and fertility, too, is affected.

#### Efforts to protect forests from fire

- In 2004, the FSI developed the **Forest Fire Alert System** to monitor forest fires in real time.
- In its advanced version launched in January 2019, the system now uses **satellite information gathered from NASA and ISRO**.
- The real-time fire information from identified fire hotspots is gathered using **MODIS sensors** (1km by 1km grid) and electronically transmitted to FSI.

#### 8.4 Clean Ganga Fund

Recently, the Ministry of Jal Shakti has informed that as on March 2021, funds of Rs 453 crore have been deposited in the **Clean Ganga Fund**.

- The **Ganga Action Plan was launched in 1986** with the objective of pollution abatement, to improve water quality by interception, diversion and treatment of domestic sewage and toxic waste.
- The Government announced the setting up of an Integrated Ganga Conservation Mission called "**Namami Gange**" and an initial sum of Rs. 2,037 crore has been allocated in the Union Budget 2014-15.
- The Government also established the **National Ganga River Basin Authority (NGRBA)**, chaired by the Prime Minister, with the objective to ensure effective abatement of pollution and conservation of the river Ganga.

#### Clean Ganga Fund



- It is set up with **voluntary contributions** from **residents** of the country and **Non-Resident Indian (NRIs) / Person of Indian Origin (PIO)** and others.
- It is set up as a **trust under the Indian Trusts Act**.
- It is managed by a Trust to be **headed by Finance Minister**.
- The secretariat of the **Trust is set up in Ministry of Jal Shakti** under the Mission Director, Clean Ganga.
- The proposal to set up CGF was to **attract private contributions globally** for increasing people's participation in this massive task.

### Features of Clean Ganga Fund

- The **domestic donors** to the Fund shall be **eligible for tax benefits** as applicable in the case of the Swachh Bharat Kosh.
- CGF will have the objective of **contributing to the national effort of improving the cleanliness of the river Ganga** with the contributions received from the residents of the country, NRIs/ PIO and others.
- CGF will be **operated through a bank account** by a Trust.
- CGF will explore the possibility of setting up **daughter funds in other jurisdictions/countries of high donor interest** such as USA, UK, Singapore, UAE, etc. to enable tax benefits to donors in their respective jurisdictions.
- CGF will be catalytic in nature and will **identify and fund specific projects** which could be pilot projects, R&D projects, innovative projects or other focused projects.

### Activities financed under Clean Ganga Fund

- Activities outlined under the '**Namami Gange**' programme for cleaning of river Ganga.
- **Control of non-point pollution** from agricultural runoff, human defecation, cattle wallowing, etc.
- Setting up of **waste treatment and disposal plants** along the river around the cities.
- Conservation of the **biotic diversity of the river**.
- Community based activities to **reduce polluting human interface** with the river.



- Development of **public amenities** including activities such as Ghat redevelopment.
- Research and Development projects and innovative projects for **new technology and processes for cleaning the river.**
- Independent oversight through **intensive monitoring and real time reporting.**

### Significance of Clean Ganga Fund

- It is an initiative to **harness the enthusiasm of people for Ganga** and to bring them closer to the Ganga and inculcate a sense of ownership.
- It involves **major organizations and general public at large** who are coming forward to contribute to the Ganga fund which **strengthens the Mission to achieve the objective** of a clean and healthy Ganga.
- It has the objective of **contributing to the national effort of cleaning of the river Ganga.**
- The money is being used in areas such as **afforestation, treatment of nalas through in-situ bioremediation process, and redevelopment of ghats.**

### 8.5 What happened when the oceans went quiet during the pandemic?

There was reduced **noise pollution** on the surface of earth during the **Covid-19 pandemic** owing to lockdowns and stop of economic activities (like international trade).

- In the underwater world, too, **anthrophony (human-made sounds)** reduced substantially for long months.
- **Noise in the Ocean:**
  - The three broad components of oceanic acoustics are:
    - **Geophony:** Sounds created by **non-biological natural events** like earthquakes, waves and bubbling.
    - **Biophony:** Sounds created by the ocean's living creatures.
    - **Anthrophony:** Sounds created by human beings (a large portion of which is **shipping noise**).
  - According to 'the Soundscape of the Anthropocene Ocean report' published in Science Journal in 2021, **geophony and biophony**

**dominated the soundscape** of oceans before the industrial era.

- However, now, **anthrophony interferes with and alters** these natural components.
- **Noise Level in Modern Times:**
  - The oceans of the **current geological era (Anthropocene era** – when human-made disruptions largely influence the environment) are noisier than the pre-industrial times.
  - During the first few days of the pandemic, ocean sound monitors at several places recorded a decibel (dB) drop.
  - The hydrophones at the **Endeavour node of Canada's Neptune Ocean Observatory showed an average decrease of 1.5 dB** in year-over-year mean weekly noise power spectral density at 100 hertz.
- **Impact of Anthrophony:**
  - In the short term anthrophony masks the **auditory signal processing by marine animals, weakening their ability** to forage for food, escape a predator or attract a mate.
  - In the long run, it can thin out the population of some underwater species.
- **The International Quiet Ocean Experiment (IQOE):**
  - It is an international scientific program to promote research, observations, and modelling to improve **understanding of ocean soundscapes and effects of sound on marine organisms**.
  - It started in 2015 and will go on till the end of 2025. The IQOE team has gathered large quantities of data during the Covid-19 pandemic.
  - IQOE is developing methods to make **ocean acoustic data more comparable. These data will be compiled into a global dataset to establish trends in ocean sound** and look for effects of the Covid-19 pandemic on ocean sound.
  - The IQOE has identified a **network of over 200 non-military hydrophones (underwater microphones)** in oceans across the world.
    - Most of the hydrophones in the network of this project are along the **shores of the USA and Canada**. Now the presence is

increasing in several other parts of the world, especially Europe.

- These hydrophones (**that pick up even faraway low-frequency signals**) have recorded sounds from whales and other marine animals, as well as those emanated by human activities.

### Hydrophone

- Just as a **microphone collects sound in the air**, a **hydrophone detects acoustic signals under the water**.
- Most hydrophones are based on a special property of certain ceramics that produces a small electrical current when subjected to changes in underwater pressure.
- When submerged in the ocean, a ceramic hydrophone produces small-voltage signals over a wide range of frequencies as it is exposed to underwater sounds emanating from any direction.
- By amplifying and recording these electrical signals, hydrophones measure ocean sounds with great precision.

### 8.6 FIA introduces sustainable fuel into Formula 1 and commits to becoming carbon neutral from 2021 and net zero by 2030

Recently, the **Fédération Internationale de l'Automobile (FIA)** has announced the first barrels of **100% sustainable fuel**, made from **bio waste** and developed to **stringent F1 (Formula One) specifications**, have been delivered to Power Unit manufacturers.

- FIA announced its intent to make F1 carbon neutral by 2030 and to have sustainable races by 2025.

### Formula One

- Formula One, also called F1 in short, is an **international auto racing sport**. F1 cars are the **fastest regulated road-course racing cars in the world**.
- F1 is the highest level of single-seat, open-wheel and open-cockpit professional motor racing contest.
- Formula One racing is **governed and sanctioned by a world body called the Fédération Internationale de l'Automobile (FIA)** or the International Automobile Federation. The name 'Formula' comes from the set of rules that the participating



cars and drivers must follow.

- **F1 Current Carbon Footprint:**

- **Direct Effect:**

- F1's driving activities produce approximately **2,56,000 tonnes of carbon dioxide per year**, which is the equivalent to powering roughly 30,000 houses in the UK over the same time period.

- **Indirect Effect:**

- The main issue is not the **cars** themselves, which **accounted for only 0.7%** of the sport's emissions in 2019, but the **logistics of transporting teams and equipment across the globe**.
    - In 2019, road, sea and air **logistics for equipment transportation accounted for 45% of F1's emissions** with business travel for teams contributing an additional 27.7%.

Raja S



- Rounding up the list, **factories and facilities servicing the sport** represent **19.3%** of emissions, and event operations, another 7.3%.

- **Uncounted Emission:**

- The 2,56,000 number doesn't even factor in the impact of fans, millions of whom require transportation and accommodation on and around the race weekend.
    - If one were to include the emissions generated by fans, the total carbon footprint of F1 catapults to approximately **1.9 million tonnes** of carbon dioxide generated by the sport annually.

- **100% Sustainable Fuels:**

- **Background:**

- One of the most high-profile ways in which F1 plans to reduce its environmental impact is through the **continued evolution of energy-efficient engines**.
    - Starting from 1989 when the FIA Alternative Fuel Commission was formed, F1 has committed to a number of initiatives designed to improve engine efficiency, with the most notable

being its **global fuel economy initiative in 2007** which aims to reduce fuel consumption by 50% across the competition.

- In 2020, the FIA announced that it had developed a **100% sustainable fuel** and that engine manufacturers were already in the process of testing it, intending to start using it by 2026.

- **About:**

- A 100% sustainable fuel essentially represents the **third generation and most advanced iteration of biofuels**, which typically are made from by-products of industrial or agricultural waste.
- F1 cars already use biofuels but current regulations only mandate that the fuel include 5.75% of bio-components.

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- In 2022 that number will increase to 10% and by 2025, when new power units are proposed to enter the competition, the **FIA hopes to transition completely to 100% advanced sustainable fuels.**

## Biofuels



- Any hydrocarbon fuel that is produced from an organic matter (living or once living material) in a short period of time (days, weeks, or even months) is considered a biofuel.
- Biofuels may be solid, liquid or gaseous in nature.
  - **Solid:** Wood, dried plant material, and manure
  - **Liquid:** Bioethanol and Biodiesel
  - **Gaseous:** Biogas
- These can be used to replace or can be used in addition to diesel, petrol or other fossil fuels for transport, stationary, portable and other applications. Also, they can be used to generate heat and electricity.

- **Categories of Biofuels:**

- **First generation biofuels:**

- These are **made from food sources such as sugar, starch,**



vegetable oil, or animal fats using conventional technology.

- Common first-generation biofuels include **Bioalcohols, Biodiesel, Vegetable oil, Bioethers, Biogas.**

- **Second generation biofuels:**

- These are **produced from non-food crops** or portions of food crops that are not edible and considered as wastes, e.g. stems, husks, wood chips, and fruit skins and peeling.
- **Thermochemical** reactions or **biochemical** conversion processes are used for producing such fuels.

- **Examples:** Cellulose ethanol and biodiesel.

- **Third generation biofuels:**

- These are **produced from micro-organisms** like algae.

- **Example:** Butanol

- Micro-organisms like algae can be grown using land and water unsuitable for food production, therefore reducing the strain on already depleted water sources.

- **Fourth Generation Biofuels:**

- In the production of these fuels, **crops that are genetically engineered to take in high amounts of carbon are grown and harvested as biomass.**
- The crops are then converted into fuel using second generation techniques.
- The fuel is pre-combusted and the carbon is captured. Then the carbon is geo-sequestered, meaning that the carbon is stored in depleted oil or gas fields or in unmineable coal seams.
- Some of these fuels are considered as **carbon negative** as their production pulls out carbon from the environment.

- **India's Initiatives:**

- **E20 Fuel:** The Indian government has invited public comments for introducing adoption of **E20 fuel** (a blend of 20% ethanol with gasoline).



- **Pradhan Mantri JI-VAN Yojana, 2019:** The objective of the **scheme** is to create an ecosystem for setting up commercial projects and to boost research and development in the 2G Ethanol sector.
- **Reduction in GST:** The Government has also reduced **GST** on ethanol for blending in fuel from 18% to 5%.
- **National Biofuel Policy 2018:** The Policy categorises biofuels as “Basic Biofuels” viz. First Generation (1G) bioethanol & biodiesel and “Advanced Biofuels” – Second Generation (2G) ethanol, Municipal Solid Waste (MSW) to drop-in fuels, Third Generation (3G) biofuels, bio-CNG etc. to enable extension of appropriate financial and fiscal incentives under each category.

### 8.7 Doomsday Glacier

Recently, the researchers at Sweden’s University of Gothenburg have said that fears related to **Doomsday Glacier’s melting ice** are worse than previously thought.

#### Doomsday Glacier

- It is also known as **Thwaites Glacier** located in **Antarctica**.
- It is 120 km wide at its **broadest, fast-moving, and melting fast** over the years.
- It contains **enough water to raise the world sea level** by more than half a metre because of its size (1.9 lakh square km).
- It is important for Antarctica as it **slows the ice behind it** from freely flowing into the ocean.

#### Key Findings

- The Gothenburg study used an **uncrewed submarine** to go under the Thwaites glacier front to make observations.
- The **submersible called “Ran”** measured among other things the **strength, temperature, salinity and oxygen content** of the ocean currents that go under the glacier.
- The researchers have been able to **identify three inflows of warm water**, among



whom the damaging effects of one had been underestimated in the past.

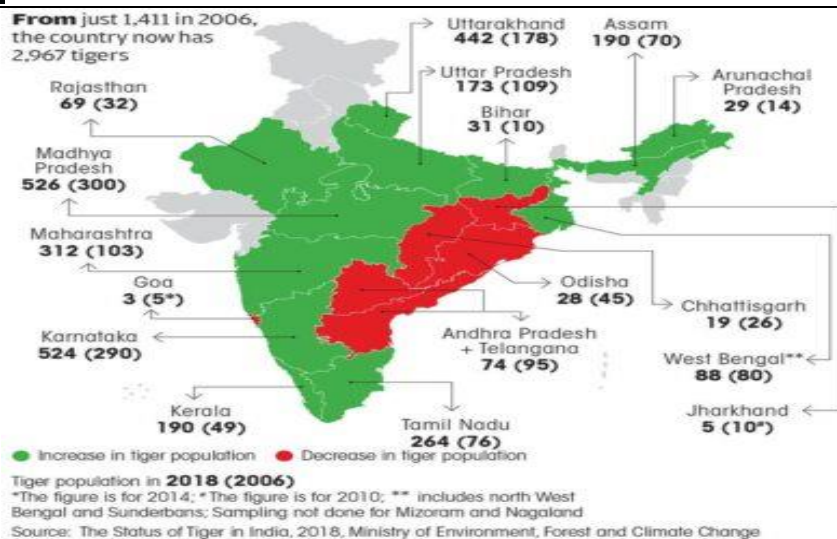
- The researchers discovered that there is a **deep connection to the east** through which deep water flows from **Pine Island Bay**.
- The study shows that **warm water is approaching the pinning points of the glacier from all sides**, impacting these locations where the ice is connected to the seabed.

### 8.8 Navegaon-Nagzira Tiger Reserve

Recently, three labourers were killed and two others injured during an operation to douse a forest fire at Navegaon-Nagzira Tiger Reserve (NNTR).

#### Navegaon-Nagzira Tiger Reserve

- It was notified as the **46th tiger reserve of India** in 2013.
- It is the **5th tiger reserve of Maharashtra**.
- It is situated in **Gondia and Bhandara districts** of Maharashtra.
- Gondia districts shares boundary with the states of **Madhya Pradesh** on the north side and **Chhattisgarh** in the north-eastern side.
- It is comprised of notified area of **Nawegaon National Park, Nawegaon Wildlife Sanctuary, Nagzira Wildlife Sanctuary, New Nagzira Wildlife Sanctuary** and **Koka Wildlife Sanctuary**.
- It has connectivity with major tiger reserves of Central India like **Kanha and Pench Tiger Reserve of MP, Pench and Tadoba-Andhari Tiger Reserve in Maharashtra** and **Indravati TR in Chhattisgarh**.



### Habitat and Ecosystem of Navegaon-Nagzira Tiger Reserve

- The major forest type of Navegaon-Nagzira Tiger Reserve is ‘**Southern Tropical Dry Deciduous Forest**’.
- It includes **dry mixed forests to moist forest type**.
- These trees are of **high economic value, medicinal quality, aromatic and some ornamental plant species** like Team, Bhel, Bhor, Haldu, Jamun, Kawat etc.

### 8.9 Odisha forest dept claims dolphin population doubled in a year

Recently, Odisha has released the final data on the dolphin census, indicating a spectacular growth in numbers.

- **Census Data:**
  - The **population of dolphins in Chilika**, India’s largest brackish water lake, and along the Odisha coast has **doubled this year (2021)** compared with last year.
  - **Three species were recorded** during the census, with 544 **Irrawaddy, bottle-nose and humpback dolphins** sighted this year, compared with 233 last year.
  - The **rise in the Irrawaddy dolphin population in Chilika** can be attributed to the **eviction of illegal fish enclosures**.

- **Irrawaddy Dolphins:**

- **Habitat:** Irrawaddy dolphins are **found in coastal areas in South and Southeast Asia**, and in **three rivers:** the Ayeyarwady (Myanmar), the Mahakam (Indonesian Borneo) and the Mekong.

- The Mekong River Irrawaddy dolphins inhabit a 118-mile stretch of the river between Cambodia and Lao PDR.

- **Conservation Status:**

- **IUCN Red List:** Endangered
- **CITES:** Appendix I
- **CMS (Convention on Migratory Species):** Appendix I
- **Wildlife Protection Act, 1972:** Schedule I

- **Indo- Pacific Bottlenose Dolphins:**

- **Habitat:** Indo-Pacific Bottlenose Dolphins generally occur in shallow coastal waters of the **Indian Ocean, Southeast Asia and Australia.**

- **Conservation Status:**

- **IUCN Red List:** Near Threatened
- **CITES:** Appendix II

- **Indian Ocean Humpback Dolphins:**

- **Habitat:** The Indian Ocean Humpback Dolphin occurs within the Indian Ocean from South Africa to India.

- **Conservation Status:**

- **IUCN Red List:** Endangered
- **CITES:** Appendix I
- **Wildlife Protection Act, 1972:** Schedule I

### Chilika Lake

- Chilika is **Asia's largest and world's second largest lagoon.**
- It **lies on the east coast of India in the state of Odisha**, separated from the mighty Bay of Bengal by a small strip of sand.



- It spreads over Puri, Khurda and Ganjam districts of Odisha on the east coast of India, at the mouth of the Daya River, flowing into the Bay of Bengal, covering an area of over 1,100 square kilometers.
- It is the **largest wintering ground for migratory birds** on the Indian sub-continent and is home to a number of threatened species of plants and animals.
- In 1981, Chilika Lake was designated the **first Indian wetland of international importance** under the **Ramsar Convention**.
- Major attraction at Chilika is **Irrawaddy dolphins** which are often spotted off Satapada Island.
- The **large Nalabana Island (Forest of Reeds)** covering about 16 sq km in the lagoon area was declared a **bird sanctuary** in 1987.
- **Kalijai Temple** – Located on an island in the Chilika Lake.

### 8.10 New Bamboo-Dwelling Bat Species in Meghalaya

Recently, a team of scientists from the **Zoological Survey of India (ZSI)** has discovered a new **Bamboo-Dwelling Bat Species** in Meghalaya's Lailad area near **Nongkhylllem Wildlife Sanctuary**.

#### Bamboo-Dwelling Bat Species

- The **flying mammal (Eudiscopus Denticulus)** is **India's first** bamboo-dwelling bat with sticky disks.
- The bats are very **distinctive in appearance with prominent disk-like pads in the thumb** with bright orange colouration.
- It is reported to **roost inside bamboo internodes** aided by its adhesive disks.
- It has only been reported in a few localities in **Southern China, Vietnam, Thailand and Myanmar**.
- It takes the **count of flying mammals in India to 130**.
- The researchers have hypothesized that **Eudiscopus bats from Vietnam and Meghalaya may have a very recent common origin** and all existing bat populations expanded from the same region.
- The newly-recorded bat was **presumed to be a bamboo-dwelling species**, but

its **flattened skull and adhesive pads** helped in identifying it as the disk-footed.

### Nongkhylllem Wildlife Sanctuary

- It is located in the **Ri Bhoi district of Meghalaya**.
- The **Nongkhylllem Wildlife Sanctuary, Nongkhylllem Reserve Forest** and a **portion of community forest west of the Umtrew River** that is being acquired by the state government.
- The area has become **broken and rugged** because of continuous erosion by the **rivers Umtrew, Umran, Umling and Umtasor**.
- There is a **natural lake called Birbah** in the southern part of the sanctuary.
- The area has a **tropical monsoon climate**.
- The major part of the habitat is **Tropical Moist Deciduous Forest** with patches of **Tropical Semi-Evergreen Forest**.
- It has been found to be the **best protected area (PA) in the North East**.

### 8.11 State of the Global Climate for 2020

Recently, the **World Meteorological Organization (WMO)** released its annual **State of the Global Climate for 2020**.

#### Key Highlights of State of the Global Climate for 2020

- The report stated that the **extreme weather combined with COVID-19** is a double blow for millions of people in 2020.
- The pandemic-related economic slowdown **failed to put a brake on climate change drivers and accelerating impacts**.
- It highlighted that the **year 2020 was one of the three warmest years on record**, despite a cooling La Nina event.

#### Five key indicators of irreversible changes in the global climate

- **Greenhouse Gases:** Notwithstanding the economic slowdown due to the COVID-19 pandemic, emission of major greenhouse gases increased in 2019 and 2020 and the level of greenhouse gas emission will be higher in 2021.
  - The report found out that if the CO<sub>2</sub> concentration follows the same pattern as in previous years, it could reach or exceed 414 ppm in 2021.
  - Globally averaged mole fractions of carbon dioxide (CO<sub>2</sub>) have already



exceeded 410 parts per million (ppm).

- **Oceans:** In 2019, the oceans had the highest heat content on record and it has broken this record further in 2020.
  - The report highlighted that over 80 per cent of the ocean area experienced at least one marine heatwave in 2020.
  - The percentage of the ocean that experienced “strong” marine heat waves (45 per cent) was greater than that which experienced “moderate” marine heat waves (28 per cent).
- **Sea-level rise:** There was a blip in summer of 2020 that recorded a drop in sea level due to the La Nina induced cooling.
  - The sea level has recently been rising at a higher rate partly due to the increased melting of the ice sheets in Greenland and Antarctica.
- **The Arctic and the Antarctica:** In 2020, the Arctic sea-ice extent came down to second lowest on record.

- The 2020 Arctic sea-ice extent minimum after the summer melt was 3.74 million square kilometre.
- In a large region of the Siberian Arctic, temperatures in 2020 were more than 3°C above average, with a record temperature of 38°C in the town of Verkhoyansk.
- The Antarctic ice sheet has exhibited a strong mass loss trend since the late 1990s.
- It accelerated around 2005, and currently, Antarctica loses approximately 175 to 225 Gt per year, due to the increasing flow rates of major glaciers in West Antarctica and the Antarctic Peninsula.

### Climate indicators and sustainable development goals (SDGs)

- The 2030 Agenda for Sustainable Development provides a shared **blueprint for peace and prosperity for people and the planet**, now and into the future.
- The **rising temperatures are leading to the loss of species and ecosystems**, which can reduce agricultural and fishing yields, contributing to food insecurity and affecting livelihoods (**SDGs 1, 2, 14 and 15**).
- The **extreme weather and climate events** can increase health risks, damage infrastructure and lead to water scarcity (**SDGs 1, 3, 6, 9 and 11**).
- The **uneven distribution of such risks** across populations and regions can reinforce or worsen existing inequalities (**SDG 10**).

### India and State of the Global Climate for 2020

- **Costliest tropical cyclone:** Cyclone Amphan, which made landfall on May 2020 near the India-Bangladesh border in the eastern Bay of Bengal, was the costliest

tropical cyclone on record for the North Indian Ocean.

- It reported economic losses in India of approximately USD 14 billion.
- The large-scale evacuations of coastal areas in India and Bangladesh meant that casualties from Amphan were far lower than the number of casualties from previous comparable cyclones in the region.
- **Large displacement of population in India:** About 2.4 million people were displaced in India, mostly in West Bengal and Odisha, and 2.5 million were displaced in Bangladesh due to the cyclone.
  - The report also noted that India had one of its two wettest monsoon seasons since 1994, with nationally-averaged rainfall above the long-term average.
  - More than 2000 deaths were reported during the monsoon season in India, Pakistan, Nepal, Bangladesh, Afghanistan and Myanmar.

### Recommendations in State of the Global Climate for 2020

- It requires **sizeable reductions in carbon emissions** to meet the aim of the 2015 Paris Agreement.
  - It aims to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels.
- A push in **green infrastructure investment combined with steadily rising carbon prices** could deliver the emission reductions needed to limit the increase in temperatures and to put the global economy on a more sustainable growth path.
- The **introduction of environmental policies** has been accompanied by increases in global innovation and investment in clean energy technologies.
  - It has made important contributions to the **reallocation of innovation, electricity generation, and employment** towards low-carbon activities.
- A **green infrastructure investment push and subsidies for renewable energy generation**, combined with pre-announced gradually increasing carbon prices, would lead to the emissions reductions that are needed to keep temperature increases to safer levels.
- The adaptation policies aimed at **enhancing resilience to a changing climate**, such as investing in disaster-proof infrastructure and early warning systems, can limit the impact of weather-related shocks.

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- **Large displacement of population in India:** About 2.4 million people were displaced in India, mostly in West Bengal and Odisha, and 2.5 million were displaced in Bangladesh due to the cyclone.

- The report also noted that India had one of its two wettest monsoon seasons since 1994, with nationally-averaged rainfall above the long-term average.
- More than 2000 deaths were reported during the monsoon season in India, Pakistan, Nepal, Bangladesh, Afghanistan and Myanmar.

### Recommendations in State of the Global Climate for 2020

- It requires **sizeable reductions in carbon emissions** to meet the aim of the 2015 Paris Agreement.
  - It aims to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels.
- A push in **green infrastructure investment combined with steadily rising carbon prices** could deliver the emission reductions needed to limit the increase in temperatures and to put the global economy on a more sustainable growth path.
- The **introduction of environmental policies** has been accompanied by increases in global innovation and investment in clean energy technologies.
  - It has made important contributions to the **reallocation of innovation, electricity generation, and employment** towards low-carbon activities.
- A **green infrastructure investment push and subsidies for renewable energy generation**, combined with pre-announced gradually increasing carbon prices, would lead to the emissions reductions that are needed to keep temperature increases to safer levels.
- The adaptation policies aimed at **enhancing resilience to a changing climate**, such as investing in disaster-proof infrastructure and early warning systems, can limit the impact of weather-related shocks.

### 8.13 Green New Deal (GND)

Recently, the US President Joe Biden has **unveiled his \$2 trillion infrastructure plan**, promising to fight climate change and create new jobs in the process.

- The Republicans have called it the **Green New Deal (GND)** but it only takes in certain elements from the GND.



### What is the Green New Deal?

- The US President Franklin D. Roosevelt introduced a **'New Deal'** in response to the **Great Depression**, which included social and economic reforms and public works projects.
- It calls for **public policy proposals to address climate change, increase investment in renewable energy and resource efficiency**, combining **Roosevelt's economic approach** to create jobs and reduce economic inequality.
- It was central to the **Green Party presidential campaign** of Jill Stein in 2016 and has been part of the US Green Party's platform for over a decade.
- The **Green New Deal is a resolution**, a roadmap for what America needs to do to **address climate change and avoid a global catastrophe**.
- The resolution says the US must take a **leading role in reducing emissions**.
  - The main goal is to **reduce US's greenhouse gas emissions to net-zero by 2030** along with creating jobs, establishing universal healthcare, high minimum wages and integrating the US through public transport.
  - The prime goal is to **decarbonise the economy by reducing carbon emissions to net-zero** by switching to 100 percent renewable energy sources.
    - It includes improvements to the **public transport network to include more electric vehicles**, and also investments in making the network more dense.
- It aims to possibly **ban the sale of gasoline and diesel vehicles** by 2030.
- It aims to **reduce emissions by implementing a zero-carbon standard for new**





**buildings** and funding for retrofitting of existing buildings that are dependent on natural gas for heating and cooling.

### Arguments against Green New Deal

- The Republicans say the plan would **devastate the economy and lead to tax increases** with the fossil fuel industries witnessing huge job losses.
- The more rational critics argue that the **2030 goal is too optimistic** and a more realistic one would be 2045 or 2050.
- There are **questions about financing the plan** that have been raised by Republicans and Democrats alike.
- The plan is unlikely to pass in either house **without a concrete funding and investment strategy**.
- People are going to have to **start paying their fair share in taxes that will contribute to the GND** and has suggested tax rates of upto 60% – 70% for the ultra-rich.

### Biden infrastructure plan v/s Green New Deal

- During the first US Presidential Debate in 2020, **Biden said he didn't support the GND**, but in his climate change plan, the GND will pay for itself.
- Biden's plan will **accelerate actions against climate change by adopting renewable and cleaner energy sources** and promote racial equality in the economy.
- Biden's plan aims to **achieve net-zero emissions by 2050** whereas the GND sets it a slightly unrealistic 2030.
- The bill aims to launch a **Climate Conservation Corps** which will employ people to conserve public lands.
- It will **increase spending in R&D and training a new workforce**, an idea strongly highlighted in the GND.
- It shares the same principles with GND when it comes to **providing minimum wage to employees, benefits, and freedom to join unions**.



### 8.14 Why fishermen in Odisha's Ganjam are protesting plan for Blue Flag beaches?

Recently Odisha government's plan to get Blue Flag Certification for five beaches was opposed by the fishermen.

- Odisha planned to develop five more beaches in three districts to meet **international standards** after receiving the certification for Puri's Golden Beach in 2020.
- **Fishermen's Demands:**
  - The proposed land for the certification is used by the fishermen to anchor their boats.
    - They want a permanent sea mouth to anchor the fishing boats.
  - Protection of livelihood should be ensured and protected.
  - Reopening of a new fishing jetty.
- **Blue Flag Certification:**
  - **Blue Flag** beaches are considered the **cleanest beaches of the world**.
  - The Blue Flag is one of the world's most recognised **voluntary eco-labels** awarded to beaches, marinas, and sustainable boating tourism operators.
  - **Criteria for Certification:**
    - In order to qualify for the Blue Flag, a series of stringent environmental, educational, safety, and accessibility criteria must be met and maintained.
    - There are around **33 criteria** that are to be met to qualify for a **Blue Flag certification**,
      - Such as the water meeting certain quality standards, having waste disposal facilities, being disabled-friendly, having first aid equipment, and no access to pets in the main areas of the beach.
    - Some criteria are voluntary and some compulsory.
  - **Organisations:**



- The Blue Flag Programme for beaches and marinas is run by the international, non-governmental, non-profit organisation FEE (the Foundation for Environmental Education).

- **FEE** (the Foundation for Environmental Education) was **established in France in 1985**.
- **On the lines** of Blue Flag certification, India has also launched its own **eco-label BEAMS (Beach Environment & Aesthetics Management Services)**.

## BEAMS

- **Beach Environment & Aesthetics Management Services** that comes under **ICZM (Integrated Coastal Zone Management)** project.
- This was launched by the **Society of Integrated Coastal Management (SICOM)** and the **Union Ministry of Environment, Forest and Climate Change (MoEFCC)**.
- The objectives of **BEAMS program** is to:
  - **Abate pollution** in coastal waters,
  - **Promote sustainable** development of beach facilities,
  - **Protect & conserve coastal** ecosystems & natural resources,
  - **Strive and maintain** high standards of cleanliness,
  - **Hygiene & safety** for beachgoers in accordance with coastal environment & regulations.
- **There are eight beaches in India which have received Blue Flag Certification:**

## THE MAGNIFICENT EIGHT

Shivrajpur (Dwarka, Gujarat)  
Ghogha (Diu)  
Kappad (Kerala)

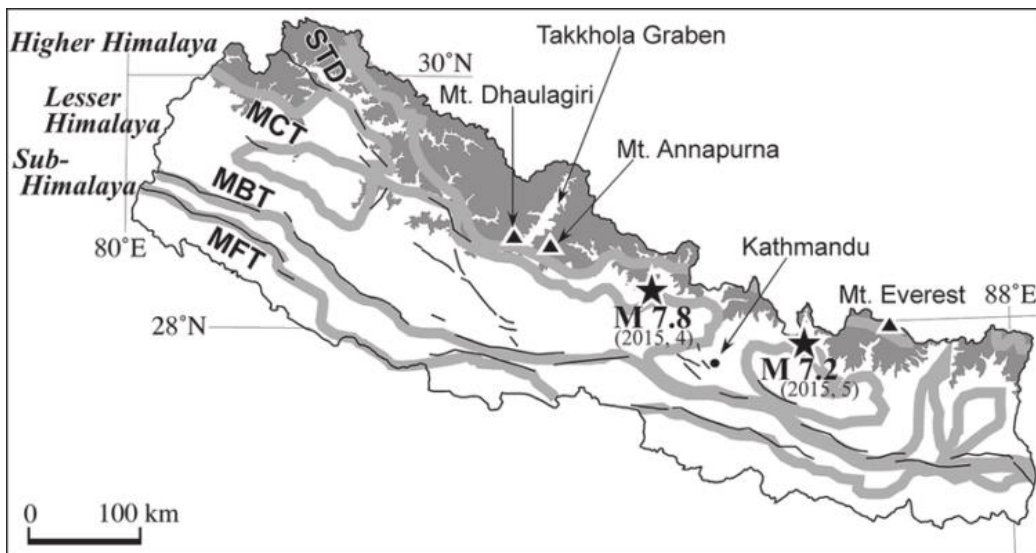
Rushikonda (Andhra Pradesh)  
Golden Beach (Puri, Odisha)  
Radhanagar (A&N Islands)

Kasarkod & Padubidri  
(Karnataka)



Kasarkod beach in Karnataka is one of eight beaches to get the coveted Blue Flag certification

### 8.15 Himalayan Front Thrust (HFT)



Recently, several houses and buildings were damaged after an **earthquake of magnitude 6.4** on the Richter scale hit Assam.

- The preliminary analysis shows that the events are located near to **Kopili Fault** closer to **Himalayan Frontal Thrust (HFT)**.

#### What is Himalayan Front Thrust (HFT)?

- It is also known as the **Main Frontal Thrust (MFT)**.
- It is a **geological fault** along the boundary of the **Indian and Eurasian tectonic plates**.

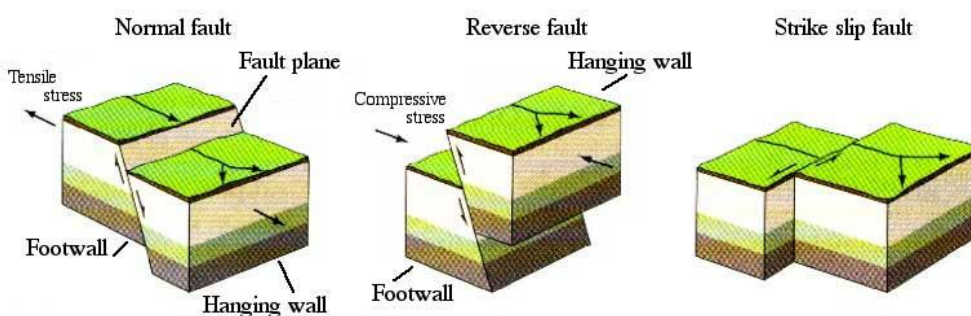
- It demarcates a sharp **physiographic and tectonic boundary** between the **Himalayan foothills** and the **Indo-Gangetic Alluvial Plains**.
- It represents a **discontinuous zone of active faulting** between the Sub-Himalaya and the alluvial plain.

### Kopili Fault

- The **Kopili** is the **main river** of the Kopili Valley.
- Geologically, Kopili Valley area **comprises Neogene-Quaternary sediments** which were deposited directly over the Archean basement.
- The Kopili Fault is a **300-km northwest-southeast trending fault** from the **Bhutan Himalaya to the Burmese arc**.
- The Kopili Fault is a **NW–SE trending strike-slip fault** where intense seismic activity occurs down to a depth of about 50 km beneath the Kopili Fault, and the **activity continues to the Main Central Thrust (MCT)** in the Bhutan Himalaya.

### Fault

- The United States Geological Survey (USGS) defines a fault as a **fracture along which the blocks of crust on either side have moved** relative to one another parallel to the fracture.
- According to the USGS, when an **earthquake occurs on one of these faults**, the rock on one side of the fault **slips with respect to the other**.
- The fault surface can be **vertical, horizontal, or at some angle** to the surface of the earth.





### Types of Fault

- **Normal fault:** It is a dip-slip fault in which the block above the fault has moved downward relative to the block below.
- **Thrust fault:** It is a dip-slip fault in which the upper block, above the fault plane, moves up and over the lower block.
- **Strike-slip fault:** It is a fault on which the two blocks slide past one another.

### 8.16 South Asian Climate Outlook Forum (SASCOF)

Recently, the **consensus report SASCOF-19** was prepared and released by the **South Asian Climate Outlook Forum (SASCOF)**.

- The report has made a forecast of **normal to above normal rainfall over most South Asian countries** during the upcoming monsoon season.
- The report was prepared and released in consultation with **global climate experts and meteorologists from South Asian countries**.
- The report states that **above normal rainfall** is likely along the **Himalayan foothills, central and western India**.
  - It also states that **normal rain is expected** along most parts of **India, including the southern peninsula, north Myanmar, Sri Lanka, Bhutan and Pakistan**.
- The report said that **below normal rain** is likely along southern **Tamil Nadu, Jammu and Kashmir, Bihar, West Bengal, Jharkhand, northeast India, Afghanistan** and its adjoining areas of **Pakistan and south Myanmar**.
- The international experts pointed out that the El Nino Southern Oscillation (ENSO) neutral conditions would prevail throughout the monsoon season.
- The South Asia could experience above normal minimum temperature whereas the maximum temperature here could range between normal to below normal during the four monsoon months.

### South Asian Climate Outlook Forum (SASCOF)

- It is a forum of climate experts representing **Afghanistan, Pakistan, India, Sri**



### **Lanka, Bangladesh, Nepal and Bhutan**

- It consists of expertise from members of the **World Meteorological Organisation, Regional Integrated Multi-Hazard Early warning System, Japan Meteorological Agency and Korea Meteorological Administration.**
- It is conducted by **South Asian nations** and the **World Meteorological Organisation (WMO)** since 2010.
- It prepares **consensus seasonal climate information on a regional scale** that provides a consistent basis for preparing national level outlooks.
- It serves to **interface with user sectors to understand and enhance the use of climate information** as orchestrated and supported by the Global Framework for Climate Services (GFCS).
- The **North East Monsoon influences southern parts of South Asia**, including peninsular India, Sri Lanka, Maldives and southern coastal areas of Myanmar.
- The **Northern parts of the region** including Afghanistan, Pakistan, north India, Bhutan, Nepal, Bangladesh and Myanmar get influenced mainly during by **extra-tropical activity dominated by Western disturbances.**

### **8.17 Global Forest Goals Report 2021**

Recently, the **Department of Economic and Social Affairs of the United Nations (UNDESA)** has released the **Global Forest Goals Report 2021.**

- The **United Nations Strategic Plan for Forests 2017-2030** was created with a mission to **promote sustainable forest management and enhance the contribution of forests and trees** to the 2030 Agenda for Sustainable Development.
- The Plan recognizes that in order to **create a world in which forests could provide economic, social, environmental and cultural benefits** for present and future generations, they will be needed by humanity in the first place.
- It highlighted that the **novel coronavirus disease (COVID-19) pandemic** has aggravated the challenges faced by countries in managing their forests.
- It is **estimated that 252 million people living in forests and savannas** currently earn less than US\$1.25 per day, which was the World Bank's poverty line measure





through 2015

- The report called for a future course of action that included **greater sustainability and a greener and more inclusive economy** to tackle the threats of COVID-19, climate change and the biodiversity crisis faced by forests.
- In 2020, nearly 18% of the **world's forests stood in legally** established protected areas, compared to just over 14% in 2000.
- The **area of protected forests grew worldwide at nearly three million ha per year** between 2010 and 2020 (10 million ha/year between 2000 and 2010), with increases in every region.
- Currently, **73% of the world's forests is under public ownership, 22% is privately owned**, and the remainder is categorized as either “unknown” or “other” (where ownership is disputed or in transition).

### Global Forest Goals Report

- It is the **first evaluation of where the world stands** in implementing the **United Nations Strategic Plan for Forests 2030**.
- It **draws upon 52 voluntary national reports and 19 voluntary national contributions**, representing 75 per cent of forests in the world.
- It was prepared by the **Department of Economic and Social Affairs of the United Nations (UNDESA)**, through its **United Nations Forum on Forests Secretariat (UNFFS)**.
- It draws upon **quantitative and bio-physical global data** primarily from the **Global Forest Resources Assessment (FRA) 2020** which is produced by the Food and Agriculture Organization (FAO).
- It provides an initial overview of progress towards achieving the six Global Forest Goals and their 26 associated targets as contained within the **United Nations Strategic Plan for Forests 2030**.
- The **first Global Forest Goal** in the Plan provides for **increasing forest area by three per cent by 2030**.

### Six Global Forest Goals

- **Goal 1:** Reverse the loss of forest cover worldwide through sustainable forest





management, including protection, restoration, afforestation and reforestation.

- Increase efforts to prevent forest degradation and contribute to the global effort of addressing climate change.
- **Goal 2:** Enhance forest-based economic, social and environmental benefits, including by improving the livelihoods of forest-dependent people.
- **Goal 3:** Increase significantly the area of protected forests worldwide and other areas of sustainably managed forests, as well as the proportion of forest products from sustainably managed forests.
- **Goal 4:** Mobilize significantly increased, new and additional financial resources from all sources for the implementation of sustainable forest management and strengthen scientific and technical cooperation and partnerships.
- **Goal 5:** Promote governance frameworks to implement sustainable forest management, including through the United Nations forest instrument.
  - Enhance the contribution of forests to the 2030 Agenda for Sustainable Development.
- **Goal 6:** Enhance cooperation, coordination, coherence and synergies on forest-related issues at all levels, including within the United Nations system and across member organizations of the Collaborative Partnership on Forests.

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