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COVER STORY

- ❖ INDIA'S FERTILITY RATE DECLINES, WOMEN MORE CONSCIOUS THAN MEN

ECONOMY

- ❖ GOVT SHOULD INCLUDE IRON AND STEEL IN RoDTEP TO MAKE EXPORTS COMPETITIVE: EEP
- ❖ STATES DEMAND CENTRE TO EXTEND GST COMPENSATION CESS FOR ANOTHER FIVE YEARS
- ❖ FOREIGN-OWNED ASSETS IN INDIA ROSE BY \$37 BN IN Q2: RBI DATA
- ❖ RBI ALLOWS OFFLINE DIGITAL PAYMENTS
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- ❖ SBI MAKES ONLINE IMPS TRANSACTIONS UPTO RS 5 LAKH FREE
- ❖ CBIC STARTS INITIATIVE TO BOOST GST MOP-UP
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- ❖ RELIANCE INDUSTRIES RAISES \$4-BILLION IN LARGEST-EVER FOREIGN BOND SALE BY INDIAN COMPANY
- ❖ CVC EXPANDS SCOPE OF BANKING FRAUDS PANEL TO CASES ABOVE RS 3 CR
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- ❖ ANNUAL REPORT ON BANKING OMBUDSMAN SCHEME
- ❖ RETAIL INFLATION RISES TO 5.59% IN DEC FROM 4.91% IN NOV: GOVT DATA
- ❖ INDIA NEEDS GREEN REVOLUTION 2.0 TO MAKE AGRI MORE CLIMATE-RESISTANT, SUSTAINABLE: RBI
- ❖ BRENT AT 7-YEAR HIGH: HOW ARE ECONOMY, MARKETS AND INVESTORS IMPACTED?

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INDIA'S FERTILITY RATE DECLINES, WOMEN MORE CONSCIOUS THAN MEN

In a milestone of sorts, India's National Family Health Survey 2019-21 (NFHS-5) has recorded a decline in the total fertility rate (the average children a woman has) from 2.2 in the previous survey (2015-16) to 2.0 in the latest one. And here too, it was 1.6 in an urban population and 2.1 in a rural setting. Public health experts are taking a moment to let this sink in, as it indicates the population is stabilising – some states are inching up, others largely trending downwards, the direction is towards equilibrium.

The dip in fertility is attributed to a combination of factors, including better contraception initiatives and government health and family welfare schemes. But a key factor is the education of the girl child and efforts to improve overall health and nutrition.

With about 25 million babies born every year, health administrators have often pointed out that no Government anywhere in the world would be capable of creating schools and other facilities at such a pace. A stabilisation was what the health administration has been working towards all these years, and indeed, that moment has arrived, it seems.

There are too many variables to make that prediction, including how China handles its declining population. Across geographies, there is a declining trend, but experts believe that India may still be on the path to becoming the most populous nation. A critical step, however, has been achieved in stabilising growth. India has achieved replacement level fertility (pegged at 2.1), defined as the level at which the decline on a sustained basis would result in a generation replacing itself.

The short answer is no. The latest NFHS is the fifth in the series and was done in two phases because of pandemic-induced restrictions and lockdowns. It provides information on population, health, and nutrition across India, down to the state and union territories. But different regions reflect different stages of development.

The second phase of the NFHS (covering 14 States and UTs) saw a TFR range from 1.4 in Chandigarh to 2.4 in Uttar Pradesh. All Phase-II States have achieved replacement level of fertility (2.1) except Madhya Pradesh, Rajasthan, Jharkhand and Uttar Pradesh.

According to reports, five states with TFR above 2 were Bihar, Meghalaya, Uttar Pradesh, Jharkhand and Manipur. Just shy of TFR 2 were Haryana, Assam, Gujarat, Uttarakhand and Mizoram at 1.9. Six states - Kerala, Tamil Nadu, Telangana, Arunachal Pradesh, Chhattisgarh, and Odisha were at 1.8. Further at 1.7 were Maharashtra, Karnataka, Andhra Pradesh, Himachal Pradesh, Nagaland, and Tripura. And TFR was the lowest in this survey in West Bengal, at 1.6.

Public health voices and doctors say the government should focus on more of the same – educating the girl child across the board. It's one of the single most critical factors, as with education, the family's overall well-being improves, say specialists in women and child health.

Alongside, family planning and reproductive health awareness need to be imparted to adults, and they need to be encouraged to adopt these measures. Coercive policies should be kept out. Education gives young people, especially girls, a greater sense of awareness and well-being that prevents early marriages and pregnancies. This is critical in keeping the population in check, even as health administrators would now brainstorm on calibrating this growth from now on, to prevent the demographic profile from losing its balance between young and older populations.

Here's a closer look at what has shaped this demographic milestone for India:

1. Urban-rural gap

Rural areas have always had far greater fertility rates than urban areas. But that gap seems to be closing, with even rural India finally reaching the replacement-level mark (2.1) for the first time in the 2019-21 NFHS. Urban India had reached the mark in the 2005-06 survey.

The gap between the fertility rates in the two geographies was 1 point in 1992-93 (3.7 for rural vs 2.7 for urban), which has narrowed down to 0.5 in the last 30 years.

From a fertility rate of 5.4 in 1971, India's villages have come a long way. India would not have been able to bring its overall fertility rate in check had rural areas not shown improvement, as a majority of Indians still live in villages.

Not just on the total fertility rate, the countryside has shown improvement on related fertility indicators such as adolescent pregnancies and awareness and practice of family planning as well, the data shows.

2. Fertility age

As women marry later, fertility has been declining across younger age groups, even in the 20-24 and 25-29 brackets when women are at their fertility peak, past data from the Sample Registration System has shown. However, the biggest change was noted in the 15-19 age group, with a marked decline in teenage

pregnancies over the years. This should be seen with the fact that fewer women now get married before the legal age of marriage at 18.

The mean age of fertility also inched up from 26.5 years in 2011 to 28.4 years in 2018. The trend of marrying late is more common in cities, and this gets reflected in fertility data, too. The median age of marriage was 19.8 in urban areas compared to 18.1 in rural areas, showed NFHS-4 data. This has been accompanied by a rise in fertility in women above 30 years in cities and towns—the major exception to declining fertility trends.

3. Laggard states

Bihar, Meghalaya, Uttar Pradesh, Jharkhand and Manipur remain the only five states with fertility rates above the replacement level and the national average. Each of these states has historically been plagued by relatively higher levels of fertility than the rest of India.

Bihar, which suffers from the highest fertility rate, is among the states that have actually seen the biggest declines in fertility since 2015-16. But since it had a fertility rate of 4.0 in 1992-93 compared to the national average of 2.8, in a way it has improved much more than the rest of India in this period.

However, the trend has not really been steady: fertility actually showed an uptick between 1998-99 and 2005-06. Such lack of consistency is somewhat common in each of these five laggard states.

To reach the last mile and attain population stabilization, such states need sustained investments in the education, health and developmental needs of young people, said Sanghamitra Singh, a health scientist at the Population Foundation of India.

4. Underlying roadblocks

India's declining fertility is not a consequence of any top-down policy or coercive sanctions, but a sign of increasing prosperity. While it still has a long way to go, the country has progressed on a slew of indicators such as literacy, marriage age and family planning, which directly or indirectly impact fertility. In 2018, the fertility rate was 3.0 among women who could not read, compared to 2.1 among literate women.

The five laggard states underperformed on one or the other contributing indicators as well. Bihar and Jharkhand performed worse on women's literacy, under-age marriage, economic opportunity for women and the practice of family planning methods. Uttar Pradesh fared poorer on three of these four indicators.

Meghalaya and Manipur performed far better than the national average on the first three indicators, but lagged on the use of contraception.



GOVT SHOULD INCLUDE IRON AND STEEL IN RoDTEP TO MAKE EXPORTS COMPETITIVE: EEPC

Recently, Engineering Export Promotion Council of India urged that, government should include iron and steel products in the Remission of Duties and Taxes

on Exported Products (RoDTEP) scheme to make exports more competitive.

Proposals by EEPC:

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- A **reduction in custom duty** on copper ores and concentrates from 2.5% to nil was proposed.
- A custom duty exemption for goods used in **manufacturing of refrigerator compressors** such as air or vacuum pumps, air or other gas compressors and fans.

Need:

Low profit due to high raw material

- The **profit margins** of Manufacturer-exporters have shrunk due to high raw material prices and a surge in ocean freight cost.
- **Availability of the ores** at a competitive price would ensure reasonable prices of primary products in the domestic market.
- It would result in the growth of exports of **value-added products**.
- Indian industry will focus on sourcing **copper concentration** in the market, If the duty is reduced to zero.

RODTEP Scheme:

- Remission of Duties and Taxes on Exported Products (RODTEP) was launched in 2020.
- It is applicable to **the export of products** but not services.
- It was enforced to **repeal and reduce taxes** for exported products and increasing the amount of export in the country.
- It has replaced **Merchandise export incentive schemes** (MIES).

Objectives:

- To encourage exports in the country by **reducing duties**.

- To provide easy refunds of various taxes to the exporters.
- To provide an automatic refund route for **Indian Tariff Code (ITC)** for avoiding the effect of taxes.
- To help exporters in meeting international export standards.

Features:

Refund of Duties and Taxes

- **Mandi tax, VAT, Coal cess, Central Excise duty on fuel etc.** will now be refunded under the scheme.
- Items under the MEIS and the RoSTCL (Rebate of State and Central Taxes and Levies) will come under RODTEP.

Automated System of Credit

- The refund will be issued in the form of **transferable electronic scrips**.
- These duty credits will be maintained and tracked through an electronic ledger.

Quick Verification through Digitisation

- **Verification of the records** will be done with the help of an IT-based risk management system to ensure speed and accuracy of transaction processing.

Multi-Sector Scheme

- All sectors including the **textiles sector** are covered in the scheme to ensure uniformity across all areas.
- A committee will be set up to decide regarding the sequence of introduction of the scheme across the various sectors and what degree of benefit is to be extended to each sector.

STATES DEMAND CENTRE TO EXTEND GST COMPENSATION CESS FOR ANOTHER FIVE YEARS

Due to the Covid-19 crisis, many states have demanded to extend the Goods and Service Tax (GST) compensation cess regime for another five years.

GST Compensation:

- The **Constitution (101 Amendment) Act, 2016**, was the law which created the mechanism for levying a nationwide GST.
- There is a provision in this law to compensate the States for loss of revenue arising out of implementation of the GST.
- **GST (Compensation to States) Act, 2017** guarantees all states an annual growth rate of **14% in their GST revenue** during the period July 2017- June 2022.
- If a **state's GST revenue grows slower than 14%**, such '**loss of revenue**' is taken care of by the Centre by providing GST compensation grants to the state.
- For that, a **non-lapsable Fund known as 'GST Compensation Fund' which forms part of the Public Account of India**, was created.
- GST compensation cess is levied on different lavish and addictive goods and services for that purpose. It includes tobacco products, vehicles above 1500 cc capacity, etc.
- **Cess is a tax on tax.**

Goods and Services Tax:

- GST is an **indirect tax** that is applied to goods and/or services throughout India, uniformly, making India **One Market**.
- GST replaced, existing tax regime of Value Added Tax (under control of the state) and Service Tax (under control of the center).
- Currently, the prevailing GST rates are @5%, @12%, @18%, & @28%.
- The total rate of GST is distributed in 3 heads:
 - **Central Goods and Services Tax (CGST):** Tax money goes to the center.
 - **State Goods and Services Tax (SGST):** Tax money goes to the state.
 - **Integrated Goods and Services Tax (IGST):** Tax money distributed in State and center as per the recommendation of GST council.

Genesis:

- GST was proposed by the Kelkar Task Force in 2004.
- GST is a **destination-based tax** and also has helped to reduce, **cascading effect** (tax on tax).
- 101st Constitutional Amendment Act, 2016 provided for the Goods and Services Tax.

FOREIGN-OWNED ASSETS IN INDIA ROSE BY \$37 BN IN Q2: RBI DATA

Recently, the Reserve Bank of India (RBI) released data relating to India's **International Investment Position (IIP)** at end-September 2021.

- The International Monetary Fund (IMF) describes a nation's IIP as showing the value of financial assets of residents of an economy that are claims on non-residents, or are gold bullion held as reserve assets; and of the liabilities of residents to non-residents.
- India's **Balance of Payments (Bop)** was in surplus of \$15.3 billion in Q2FY21.
- But BoP position moved to a deficit of \$9.6 billion in the quarter ended September (Q2).

Balance of Payments (BOP)

- Balance Of Payment (BOP) is a statement which records **all the monetary transactions** made between **residents of a country and the rest of the world** during any given period.
- These transactions include exports and imports of goods, services and financial assets, along with transfer payments.
- The balance of payments is put together according to international standards set out by the **International Monetary Fund (IMF)** and the **United Nation**.
- A BOP statement of a country indicates whether the country has a **surplus or a deficit of funds**:
 - When a country's export is more than its import, its BOP is said to be in surplus.
 - The **sum of all transactions** recorded in the balance of payments must be **zero**.
 - The reason is that every credit appearing in the current account has a corresponding debit in the capital account.

Structure of BoP:

- The balance of payments divides transactions into two broad accounts:

- The **current account** includes transactions in goods, services, investment income, and current transfers.
- The **capital account** includes transactions in financial instruments and central bank reserves.

Current Account:

- The current account records **the value of the flow of goods, services and income** between residents and the rest of the world.
- Trading in goods between countries are referred to as **visible items** and import/export of services (banking, information technology etc) are referred to as **invisible items**.
- **Unilateral transfers** refer to money sent as gifts or donations to residents of foreign countries.
 - It includes personal transfers like remittances.

Capital Account

- Capital transactions include the purchase and sale of assets (non-financial) like land and properties.
- The capital account also includes the flow of taxes, purchase and sale of fixed assets etc by migrants moving out/into a different country.
- **Loans and borrowings** – It include all types of loans from both the private and public sectors located in foreign countries.
- **Investments** – These are funds invested in the corporate stocks by non-residents.
- **Foreign exchange reserves** – Foreign exchange reserves held by the central bank of a country to monitor and control the exchange rate does impact the capital account.

Financial Account

Direct investment:

- Financial transactions related to **long-term capital investment** in a business (e.g., purchase of machinery, buildings and factories).

Portfolio investment

- The **purchase of equity or debt** (shares or bonds) in a business.

Financial derivative

- The **purchase or sale of financial derivatives**.
- It included financial contracts between two parties where the value is derived from another financial instrument, such as a bond or share, or a market index.

Reserve assets

- The **purchases or sale of reserve assets** held by the Reserve Bank.
- These reserves are assets controlled by the Reserve Bank to meet policy objectives such as intervention in the foreign exchange market and to assist the government in meeting its commitments to the IMF.

Significance of BoP:

- The BOP of a country reveals its **financial and economic status**.
- A BOP statement can be used as an indicator to determine whether the country's **currency value** is appreciating or depreciating.
- The BOP statement helps the Government to decide on **fiscal and trade policies**.
- It provides important information to analyse and understand the **economic dealings** of a country with other countries.

RBI ALLOWS OFFLINE DIGITAL PAYMENTS

Recently, Reserve Bank of India (RBI) has come out with a framework for facilitating small-value digital payments in offline mode to promote digital payments in semi-urban and rural areas.

Features of the framework

- Offline payments can be made in **face-to-face** (proximity) mode only.
- Payment instruments will be enabled for offline transactions by **Authorised Payment System** Operators and Participants (Banks and Non-banks).
- The offline digital payment transaction will not require an **Additional Factor of Authentication** (AFA).

- **Offline mode of payment** can be enabled only after obtaining specific consent of the provisions of **circulars limiting customer liability** issued by Reserve Bank.
- Customers have recourse to the **Reserve Bank Integrated Ombudsman Scheme** for grievance redress.
- Payment instruments shall be enabled for **offline transactions** based on the **explicit consent** of the customer.
- Reserve Bank retains the right to stop or modify the operations of any such payment solution that enables **small value digital payments in offline mode**.
- **Limit of Transaction**
 - The upper limit of an **offline payment** transaction will be **₹200**.

- The **total limit for offline transactions** on a payment instrument will be **₹2,000** at any point in time.

CRYPTOWIRE LAUNCHES INDIA'S FIRST CRYPTO INDEX

Recently, a crypto app announced the launch of India's first index of cryptocurrencies, IC15.

IC-15:

- It tracks and measures the performance of top 15 widely traded **liquid cryptocurrencies** listed on leading crypto exchanges of the world.
- **Aim:** To empowering knowledge on crypto and blockchain ecosystem.

Features:

- It presents an easy solution to follow for having a **diversified portfolio**
- Acts as a performance benchmark for **fund managers**.
- It will help in the creation of **index-linked products** like index funds, ETFs and positions the index for efficient derivatives trading in the cryptocurrency trading marketplace.

SBI MAKES ONLINE IMPS TRANSACTIONS UPTO RS 5 LAKH FREE

Recently, State Bank of India said it has increased the online Immediate Payment Service (IMPS) limit to Rs 5 lakh from the Rs 2 lakh, in order to encourage customers to adopt digital banking.

What is IMPS?

- Immediate Payment Service (IMPS) is an **interbank electronic fund transfer** service.
- IMPS transactions are **channel independent** and can be initiated from Mobile, Internet, or ATM channels.
- It is managed by **National Payments Corporation of India (NPCI)**, and comes under the purview of the Reserve Bank of India (RBI).

Key Features of IMPS

- **Instant Fund Transfer:** It allows transferring of funds instantly within banks across India which is not only safe but also economical.
- **Fast and Inexpensive:** Transaction can be done using only the mobile no. and MMID of the beneficiary.
 - Mobile Money Identification Number (MMID) is a seven-digit number of which the first four digits are the unique identification number of the bank offering IMPS.
- **Accessible:** This feature is available even on holidays and weekends.

The participants of IMPS:

- Remitter (Sender)
- Beneficiary (Receiver)
- Banks

- National Financial Switch-NPCI

Objectives of IMPS

- To enable bank customers to use **mobile instruments as a channel** for accessing their banks accounts and remit funds.
- **Making payment simpler** just with the mobile number of the beneficiary.
- To sub-serve the goal of Reserve Bank of India (RBI) **in electronification of retail payments.**
- To build the foundation for a full range of **mobile based Banking services.**

Real-Time Gross Settlement- RTGS

- Real-Time Gross Settlement (RTGS) is a fund transfer system based on a **gross settlement concept** where money is moved from one bank to another in real-time.
- It is designed for **high transaction amounts** for payments that needs to be processed immediately.

Key Features of RTGS

- **Quick** : It allows transfer in real time with no need of waiting.
- **Wider Boundaries**: The money can be sent to any RTGS-enabled bank branch in India.
- **Secure**:
 - Smart **user authentication** to ensure safety of transactions.
 - It is used by central banks worldwide to **minimize the risks** related to high-value payment settlements among financial institutions.
- **High-value transactions**
 - Amounts greater than ₹ 2 lakhs.

- **No upper limit** for RTGS transactions from branches.
- For Online transaction, the maximum amount of funds that can be transferred per day is as per the customer's TPT (Third Party Transfer) limit (Maximum upto Rs. 50 Lakh).

NEFT - National Electronics Fund Transfer

- National Electronics Fund Transfer (NEFT) is a **country-wide** electronic fund transfer system.
- It allows for **sending money from one bank account to another** in a safe and hassle-free manner.

Advantages of NEFT Fund Transfer

- It can be **assessed on all days** of the year.
- It provides secure transaction by sending positive confirmation to the remitter by SMS / e-mail on credit to beneficiary account.
- It provides **Pan-India coverage** through large network of branches of all types of banks.
- It also provides **penal interest provision** for delay in credit or return of transactions.
- Charges are not levied by RBI from banks.
- **No charges are levied** to savings bank account customers for online NEFT transactions.
- It can be used for a **variety of Payment transactions** including payment of credit card dues to the card issuing banks, payment of loan EMI, inward foreign exchange remittances, etc.
- It is also available for **one-way funds transfers from India to Nepal.**

CBIC STARTS INITIATIVE TO BOOST GST MOP-UP

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Central Board of Indirect Taxes and Customs (CBIC) has started a new initiative of holding meetings with officials of state tax administrations across the country to boost Goods and Services Tax (GST) revenue collections

Central Board of Indirect Taxes and Customs- CBIC

- It is a part of the **Department of Revenue** under the Ministry of Finance, Government of India.
- The Board is the **administrative authority** for its subordinate organizations, including Custom Houses, Central Excise and Central GST Commissionerate and the Central Revenues Control Laboratory.

Functions of CBIC:

- It deals with the tasks of formulation of policy concerning **levy and collection**

of taxes: Customs, Central Excise duties, Central Goods & Services Tax and IGST.

- It also deals with the **framing of licensing policy** for cultivation of Opium poppy, production of opium and export and pricing of opium.
 - It makes policy for the prevention of smuggling and administration of matters relating to Narcotics.
- **Administration of sales tax laws** (Validation) Act, 1956, Central Sales Tax, State-level Value Added Tax (VAT), Indian Stamp Act, 1989 etc.
- **Recommending projects** of social and economic welfare to the Central Government.
- Coordinating and strengthening of the **intelligence gathering activities**.
- To coordinate and strengthen collection and sharing of **financial intelligence** to combat money laundering and related crimes.

INDIA'S FALLING JOBLESS RATE AND RISKS TO EMPLOYMENT

Centre for Monitoring Indian Economy (CMIE) data shows that India's **unemployment rate** touched a four-month high of 7.9 per cent in December.

- Urban employment rate touched the 9.3% while rural employment rate rose to 7.3%.

What is Unemployment?

- Unemployment is a term referring to individuals who are **employable and actively seeking a job** but are unable to find a job.
- It is a key economic indicator because it signals the **ability (or inability) of workers** to readily obtain gainful work to **contribute to the productive output** of the economy.

Types of Unemployment

Frictional unemployment

- It occurs when people voluntarily change jobs within an economy.
- This type of unemployment is usually short-lived.
- An example is a worker who recently quit or was fired and is looking for a job in an economy that is not experiencing a recession.

Structural unemployment

- It happens when the **skills set of a worker does not match the skills demanded** by the jobs available.

- Alternatively, when workers are **available but are unable to reach the geographical location** of the jobs.
- It comes about through **technological changes in the structure of the economy** in which labor markets operate.

Cyclical Unemployment

- It is the variation in the number of unemployed workers over the course of **economic upturns and downturns**.
- Unemployment **rises during recessionary periods** and **declines during** periods of **economic growth**.

Institutional Unemployment

- It results from **long-term or permanent institutional factors** and incentives in the economy.
- The following can contribute to institutional unemployment:
 - **Government policies**, such as high minimum wage floors, generous social benefits programs, and restrictive occupational licensing laws.
 - **Labor market phenomena**, such as efficiency wages and discriminatory hiring.

Voluntary unemployment

- Voluntary unemployment happens when a worker **decides to leave a job because** it is no longer financially compelling.

Disguised Unemployment

- It is a situation in which **more people are doing work** than actually required.
- It occurs when productivity is **low and too many workers** are filling too few jobs.

Chronic Unemployment

- If unemployment continues to be a **long-term feature** of a country, it is called chronic unemployment.
- Often, the **underdeveloped economies** suffer from the chronic unemployment.

Technological Unemployment

- It is the result of **certain changes in the techniques** of production which may not warrant much labour.
- Typically, the technological unemployment occurs **with the introduction of new machinery**, and it said to be **temporary or short-lived**.

US DOLLAR'S STATUS AS DOMINANT "GLOBAL RESERVE CURRENCY" AT 25-YEAR LOW. AND USD EXCHANGE RATES?

International Monetary Fund's SDR helped maintain Balance of Payments surplus in September quarter.

Special Drawing Rights (SDR):

- The SDR is an **international reserve asset, created by the International Monetary Fund (IMF)** in 1969.
- The SDR is **neither a currency nor a claim** on the IMF and **cannot be used directly in market** transactions.

- It is a **potential claim** on the **freely usable currencies** of IMF members.
- They can be used by countries to **gain access to hard currency** and can also be used for **repaying loans to the IMF**.

SDR Transactions:

- Holders of SDRs can obtain **hard currencies in exchange for their SDRs** by **voluntarily exchanging** them with other members.
- IMF can designate members with large holdings of reserves to purchase SDRs from members who need reserves.

SDR Basket:

- Currencies included in the SDR basket have to meet two criteria: **the export criterion and the freely usable criterion**.
- A currency meets the **export criterion** if its issuer is an **IMF member** or a monetary union that includes IMF members, and is also **one of the top five world exporters**.
- For a **currency** to be determined "**freely usable**" by the IMF, it has to be **widely used to make payments for international**

transactions and widely traded in the principal exchange markets.

- The value of the SDR is determined daily based on market exchange rates.

Role of SDR:

- SDR allocations can play a role in **providing liquidity** and supplementing member countries' official reserves.
- It serves as the **unit of account of the IMF** and other international organizations.

Issue of SDRs:

- The **IMF** has the **authority to issue** general allocations of **SDRs to all members of the IMF** in **proportion** to their **quotas within the Fund**.
- The **quota** is based largely on a country's **relative position in the global economy**.
- A **new issuance of SDRs** represents an **increase in the global money supply**.
- Any SDR allocation must be approved by an 85 per cent majority of the total voting power, which gives the US a veto over issuance of SDRs.

RBI OFFERS A DEDICATED WINDOW FOR BOND HOUSES

Recently, Reserve Bank of India offered a dedicated window for **bond houses**.

Highlights:

- The dedicated window for bond houses called **primary dealers** has been offered by the Reserve bank of India.
- A special Switch window will be opened for **primary dealers (PD)** every month.

- PD's may switch the illiquid/semi-liquid securities acquired through the Request for Quotes segment from **Retail Direct Gilt account** holders with liquid securities from RBI at market prices.
- **Retail Direct Gilt account:** Account will allow individuals to buy Government securities directly in the primary market (auctions) as well as buy/sell in the secondary market.

Primary Dealers (PD):

- Primary dealers are registered entities with the RBI who have the license to **purchase and sell government securities**.
- PD's aims to **resell** them to other buyers. Therefore, the Primary Dealers create a market for **government securities**.
- The Primary Dealers system in the government securities market was introduced by the **RBI in 1995**.

Role and Functions of Primary Dealers

- Commit participation as Principals in Government of India issues through bidding in auctions.
- Provide underwriting services.
- Offer firm buy-sell / bid-ask quotes for **T-Bills & dated securities**.
- Development of **Secondary Debt Market**.

Eligibility Conditions for PDs:

- A subsidiary of scheduled commercial bank/s and **All India Financial Institutions**.
- Subsidiaries/ joint ventures set up in India by entities incorporated abroad.
- The company was incorporated under the **Companies Act, 1956**, and does not fall under the above two conditions.
- The applicant for PD should register as an **NBFC** for at least one year before the submission of the application.

Benefits:

- The RBI instructs PDs to have a **minimum turnover ratio, bidding ratio, underwriting ratio**, secondary market participation.
- RBI ensures that they are active in supporting the trade in government securities.

RELIANCE INDUSTRIES RAISES \$4-BILLION IN LARGEST-EVER FOREIGN BOND SALE BY INDIAN COMPANY

Recently, the Reliance Industries Limited (RIL) raised \$4 billion through its foreign currency bonds. These RIL bonds are Senior Unsecured Notes, having long term maturity, issued in USD.

What is bond?

- Bonds are the debt (loan) instruments of capital market.
- A bond certificate is issued to a buyer by the issuer.
- Certificate contains all the information about the future date of maturity of bond, along with the pre-agreed interest rate.
- A bond can be issued by any entity, including company and government.

Foreign Currency Bonds (FCB):

- Due to global LPG (Liberalization, Privatization, Globalization) reforms, bonds can be issued in domestic and international market. On the same lines, bond can also be denominated in domestic or foreign currency.
- When a domestic entity issues its bond in foreign market it is called as a **foreign bonds or offshore bonds**.
- When these **foreign bonds are denominated in foreign currency**, then it is called as **foreign currency bond (FCB)**.
- FCB can be issued in 3 different currency denominations.
 - In the domestic currency denomination of issuer.
 - In the domestic currency denomination of buyer.

- In any other globally established currency denomination (other than issuer's or buyer's domestic currency).
- **For example:**
- The **Masala Bonds** are the rupee-denominated bonds, issued outside India by domestic Indian entities.
- Here the risk of exchange value of currency lies with the buyer of the bond.
- The **Eurobonds** are issued in the currency denomination, which does not belong to the country, where it is issued.
- According to countries and their native currency denomination, Eurobonds are named like Eurodollar (USA), Euroyen(Japan), etc.

Senior Unsecured Notes (SUN):

- SUN or Senior Unsecured debts are kind of debts which are **senior to other type of**

debts while receiving profit or liquidation.

- All **debts other than SUN are secondary in nature** and called as **Junior Unsecured Notes (JUN)** or Junior Unsecured debts.
- SUN/JUN may be secured debt with security of collateral or may not be a secured debt.
- **For example:**
- In case of liquidation (closure of organization) while paying back debts, SUN holders will get their money first (on priority). Then the left money will move for distribution of JUN, and then to others.
- This priority wise distribution of money in an organisation, is called as the **waterfall model**.
- Waterfall model according to **Insolvency and Bankruptcy Code, 2016**.

CVC EXPANDS SCOPE OF BANKING FRAUDS PANEL TO CASES ABOVE RS 3 CR

Recently, the Central Vigilance Commission (CVC) expanded the scope of the Advisory Board for Banking and Financial Frauds (ABBFF).

Highlights of new norms:

- It will require every public sector bank and financial institution to file complaints for **bank frauds above ₹3 crore**.
- **Earlier** complaints were filed for only bank fraud cases of **above ₹ 50 crore**.
- It mandates the formation of **separate boards for cases** involving frauds of total amount Rs 3 crore and up to Rs 50 crore.
- It will **examine the role of all levels of officials** or wholetime directors including ex-officials or ex-wholetime directors.
- The commission in consultation with RBI & ABBFF will **appoint a secretary to the board**, on a part-time basis with a fixed remuneration.

- The person will be selected from the retired officers of the public sector banks having adequate experience and understanding in handling areas of vigilance, fraud, and credit matters.

Significance of the lowered threshold:

- It will give **assurance to bankers** that somebody else is also looking into it before it goes into fraud investigation by the government investigative agencies.
- It may **increase credit growth** in the banking system.

Advisory Board for Banking and Financial Frauds (ABBFF)

- Advisory Board for Banking Frauds (ABBF) is constituted by **Central Vigilance**

Commission (CVC) to examine bank fraud and recommend actions.

- It was previously known as **Advisory Board on Bank, Commercial and Financial Frauds**.
- **Headquarters:** Delhi
- The Reserve Bank of India (RBI) provides **required secretarial services, logistic and analytical support** along with the necessary funding to the board.

Organization:

- **Chairman and other members**, with a tenure of **two years**.
- **Members:** Officials of the level of general managers and above, whole-time directors, including former officials or former whole-time directors.

- **Jurisdiction:** Cases involving the level of officers of General Manager and above in the Public Sector Banks in respect of an allegation of a fraud in a borrowed account.

Functions:

- It conducts **first level examination** of bank frauds before recommendations are made to investigative agencies such as Central Bureau Investigation (CBI) by the respective public sector banks.
- It periodically carry-out **fraud analysis** in the financial system and give **inputs for policy formulation** related to the fraud to the RBI.
- It **renders advice** to the banks within a month of receipt of the initial reference.

NPCI SETS STANDARDISED LIMITS FOR CASH WITHDRAWALS AND MINI STATEMENTS ON AePS TRANSACTIONS

Recently, the National Payments Corporation of India has introduced limits for cash withdrawals and mini statements.

Highlights:

- Standardized limit of a **minimum of five approved cash withdrawal transactions per month** for every customer.
- Post five transactions, issuer banks can either **decline the request or charge a fee**.
- A limit of a minimum of **five mini statement transactions per customer per month** will also be implemented.
- Limits have to be implemented by January 15 2021.
- Acquirers **must implement two-factor authentication** for login of business correspondents, agents and merchants at least once a day with one of the factors as Aadhaar based biometric authentication.

Aadhaar enabled payment system (AePS)

- AEPS is a bank-led model which allows online interoperable financial transactions at PoS (**Point of Sale**) through the Bank Mitra of any bank using **the Aadhaar authentication**.
- **Aim:** To empower a bank customer to use Aadhaar as his/her identity to access their Aadhaar enabled bank account.

Application of AEPS

- Account balance check
- Aadhar to Aadhar fund transfer
- Cash withdrawal
- Cash deposit

Benefits of AEPS

- The account holder can do the **financial and non-financial transactions** through the banking correspondent.
- A banking correspondent of any bank can do the specified **transaction of any bank**.
- Customers don't need to have a **signature or debit card**.

- It has **helped to decongest banks**.
- It is particularly useful to **migrant workers who have no ATM facility**.
- Banking correspondents can reach distant rural places with the **micro-POS**.

ECLGS SCHEME SAVED 13.5 LAKH FIRMS FROM GOING BANKRUPT, 1.5 CRORE JOBS: REPORT

According to study, Emergency Credit Line Guarantee Scheme (ECLGS) provided relief to MSMEs impacted by COVID-19 pandemic.

- It has saved **13.5 lakh firms** from going **bankrupt** and consequently **1.5 crore jobs**.
- Amongst the states, **Gujarat** has been the biggest beneficiary, followed by **Maharashtra, Tamil Nadu and Uttar Pradesh**.

Emergency Credit Line Guarantee Scheme (ECLGS)

Objective

- To provide **100% guarantee coverage to banks and NBFCs** to enable them

to **extend emergency credit facility to Business enterprises and MSMEs** in view of covid-19 to meet their additional term loan.

Highlights

- Launched by government of India as a **special scheme in view of Covid-19**.
- **Tenor of loan** under Scheme shall be **four years with moratorium period of one year** on the principal amount.
- **Interest rates** under the Scheme shall be capped at 9.25% for banks and FIs, and at 14% for NBFCs.
- For the purpose of this scheme, **the term 'Business Enterprises/MSMEs'** would also include **loans covered under Pradhan Mantri Mudra Yojana (PMMY)**.

FIRST ADVANCE ESTIMATES OF NATIONAL INCOME, 2020-21

Recently, the first Advance Estimates was released by the National Statistical Office (NSO).

First Advance Estimates (FAE) of Gross Domestic Product (GDP):

- The **FAE** were first **introduced in 2016-17**.

- It is **published** at the end of the **first week of January**, soon **after the end of the third quarter** (October, November, December).
- They are the "**first**" official **estimates of how GDP is expected to grow** in that financial year.
- They are also the "**advance**" estimates because they are published long

before the financial year (April to March) is over.

- FAE do not include the formal **third quarter GDP data**, which is published at the end of February as part of the Second Advance Estimates (SAE).
- **Significance:** They are the GDP estimates that the Union Finance Ministry uses to decide the next financial year's budget allocations.

How is FAE calculated?

- The FAE are derived by **extrapolating the available data**.
- The approach for compiling the Advance Estimates is based on **Benchmark-Indicator method**.

- The estimates available for the previous year (2020-21 in this case) are extrapolated **using relevant indicators reflecting the performance of sectors**.

Gross Value Added:

- **Gross value added (GVA)** is defined as the **value of output less the value of intermediate consumption**.
- It is used to **measure the output or contribution of a particular sector**.
- When such **GVA from all sectors are added** together and adding taxes (product) and reducing subsidies (product), **we can get the GDP at market price**.
- GVA thus shows the **production contribution** of a particular sector.

EMPLOYMENT IN 9 KEY SECTORS ROSE BY 2 LAKHS IN JULY-SEPTEMBER QUARTER

Recently, the second round of the Quarterly Employment Survey (QES) was released by the Union Labour and Employment Ministry.

Quarterly Economic Survey (QES):

- The QES gives a **consolidated view of employment from demand side** at regular intervals.
- This data will help the government make evidence-based policy.
- A total of **nine sectors** were included for assessment which included:
 - Manufacturing, education, health and the IT/BPO, transport, trade, construction, accommodation and restaurant, health and financial services.

Key Findings of the Report:

- The report estimates the gross domestic product of India for the year 2021-22 at **9.2 per cent**.
- These nine sectors account for about **85% of total employment** in establishments with 10 or more workers.
- Number of **establishments with less than 100 workers were more than** establishments with more than 100 workers.
- The overall **percentage of female workers** stood at **32.1%, higher than 29.3%** reported during the first round of QES.
- **Regular workers constitute 87%** of the estimated workforce in the nine selected sectors, with only 2% being casual workers.
- However, in the **construction sector**, **20%** of the workers were **contractual** and **6.4%** were casual workers.

ANNUAL REPORT ON BANKING OMBUDSMAN SCHEME

The Reserve Bank of India (RBI) has released the Annual Report of the Ombudsman Schemes for the year 2020-21.

- It covers the activities under the Banking Ombudsman Scheme, 2006 (BOS), the Ombudsman Scheme for Non-Banking Financial Companies, 2018 (OSNBFC), and the Ombudsman Scheme for Digital Transactions, 2019 (OSDT).

Highlights:

- The **volume of complaints** received under all the three ombudsman schemes **increased** 22.27 per cent on an annualised basis and stood at 3,03,107 during the reported period.
- The **top-five grounds of complaints received** are related to:
 - ATM/debit cards and (b) mobile/electronic banking (c) credit cards (d) failure to meet commitments and (e) non-observance of fair practices code (FPC).
- The **top-3 grounds of complaints under OSDT** are:
 - Fund transfers/ unified payments interface (UPI)/ BBPS/ Bharat QR Code, mobile/ electronic fund transfer and non-reversal of debit due to wrong beneficiary transfer by system participant.
- The **groundwork for the launch of Reserve Bank-Integrated Ombudsman Scheme 2021 (RB-IOS)** have been carried out.

Reserve Bank-Integrated Ombudsman Scheme 2021 (RB-IOS):

- Reserve Bank-Integrated Ombudsman Scheme 2021 (RB-IOS), 2021 **replaces the following three existing Ombudsman Schemes:**

- The Banking Ombudsman Scheme, 2006;
- The Ombudsman Scheme for Non-Banking Financial Companies (NBFCs), 2018;
- The Ombudsman Scheme for Digital Transactions, 2019.
- It has adopted a '**One Nation-One Ombudsman**' approach, for all customers of RBI-regulated entities.
- Under the scheme, the **exclusive jurisdiction** of each ombudsman's office **has been removed**.
- A **deputy ombudsman would be appointed** to address certain categories of complaints to allow the ombudsman's office a greater adjudication role.

Single point of reference system:

- The scheme enables a **one-point interface for customers** to file complaints, submit documents, track status and get relevant information.
- It will ensure that all customers have **one platform, one email and one address** to lodge, track and monitor their complaints anytime and from anywhere.

Greater coverage

- RB-IOS will cover the customers of all scheduled commercial banks, regional rural banks, scheduled urban cooperative banks (UCBs) and other UCBs with deposits of Rs 50 crore and above, all deposit-taking NBFCs and NBFCs with assets of ₹100 crore and above, and non-bank system participants.

Free of cost redressal:

- It will provide cost-free redress of customer complaints.

- The previous schemes had **different compensation structures** resulting in unequal treatment of aggrieved customers.

Consistency in resolution for customers

- It **simplifies the procedure by covering all complaints** involving deficiency in service, and centralise the receipt and initial processing of complaints to impart process efficiency.
- The previous ombudsman schemes had **different grounds of complaints**, leading to **uneven redress** across customers of different entities.

What is Ombudsman?

- An ombudsman **investigates complaints** levelled against businesses and other organizations, including the government.
- He attempts to **resolve the conflicts** or concerns raised, either by mediation or by making recommendations.
- Depending on the jurisdiction, an ombudsman's decision **may or may not be legally binding**.
- They have a large **degree of independence** and **autonomy** in fulfilling their function.
- This is to enable the official to **act in a fair and impartial** way to all parties involved in a complaint.
- They may be appointed at a national or local level, and are often found within large organizations.

Advantages of Ombudsman

- They act as a channel for the **conduct of fair and unbiased investigations** at no cost to the complainant, providing resolutions or mediation services.

- They help in **restoring the public confidence** in the system by exposing and helping correct illegal behaviours.
- They will seek to **identify systemic issues** that can lead to **widespread rights violations** or poor quality of service to the public by the government or institution in question.

Types of Ombudsmen

Industry Ombudsman:

- An industry ombudsman deal with **consumer complaints** about **unfair treatment** the consumer received from a company that operates within that industry.
- **Example:** Telecommunications or insurance ombudsman.

Organizational Ombudsman:

- Organizational ombudsman is the official dealing with the **complaints of the employees** in a **large public entity**.
- His mandate covers the aspects relating to **services or other interaction a consumer** has had with the entity concerned.

Classical Ombudsman:

- The official may have broader range of duties such as those involving **corruption, abuse of power**, and sometimes to deal with cases where **there is human rights infringement**.

Advocate Ombudsman:

- An advocate ombudsman **advocates for people who have filed grievances** or for those with whom the grievances concern.
- They are typically found championing for long-term care residents, the elderly, the

underserved, and those who lack the capacity to advocate for themselves.

Media Ombudsman:

- Media ombudsmen **work with journalists, editors, and other media professionals** to investigate and respond to complaints.
- They publish their response to a broader audience, to promote transparency in operations.

RETAIL INFLATION RISES TO 5.59% IN DEC FROM 4.91% IN NOV: GOVT DATA

Recently, data on inflation was released by National Statistical Office (NSO).

Highlight

- **The low base effect and higher food inflation** pushed up the headline retail inflation, with core inflation to near 6 %.
- **Low base effect:** It is the tendency of a small change from a low initial amount to be resulted into a large percentage change.
- **Headline retail inflation:** It refers to the change in value of all goods in the basket.
- Food inflation climbed to a six-month high of **4.05 %**.
- The rise was mainly due to **milk** (3.8 % and **cereals inflation** (2.6 per cent) which rose to a 12-month and a 14-month high.

CPI inflation

- **Consumer Price Indices (CPI)** measure changes over time in general level of prices of goods and services that households acquire for the purpose of consumption.
- For construction of CPI numbers, two requisite components are **consumption patterns** and **price data** collected at regular intervals.
- It is published by **Central Statistical Office** and released on 12th of every month.

Significance

- CPI numbers are widely used as a **macroeconomic indicator** of inflation as a tool by governments and **central banks** for inflation targeting and for monitoring price stability and as deflators in the national accounts.
- It is also used for indexing **dearness allowance** to employees for increase in prices.
- It is therefore considered as one of the most important **economic indicators**.

Types

- CPI for Industrial Workers (IW)
- CPI for Agricultural Labourers (AL)
- CPI for Rural Labourers (RL)
- CPI for Urban Non-Manual Employees (UNME)

Consumer Food Price Index (CFPI)

- It is a measure of change in retail prices of **food items** consumed by the population.
- Under the CFPI, the index gives food price level changes for rural, urban and all India basis.
- The base year used in CFPI is **2012** as in the case of CPI.

Core inflation

- It is the change in the costs of **goods and services** but does not include those from the food and energy sectors.
- This measure of inflation excludes these items because their prices are much more volatile.
- A dynamic consumption basket is considered the basis to obtain **core inflation**.
- Core inflation is calculated using the **Consumer Price Index (CPI)** by excluding such commodities.

- **If temporary price shocks** are taken into account, they may affect the estimated overall inflation numbers in such a way that they are different from actual inflation. To eliminate this possibility, core inflation is calculated to gauge the **actual inflation** apart from temporary shocks and volatility

INDIA NEEDS GREEN REVOLUTION 2.0 TO MAKE AGRI MORE CLIMATE-RESISTANT, SUSTAINABLE: RBI

According to reserve bank of India (RBI) India needs a second green revolution along with the next generation of reforms with a view to make agriculture more climate-resistant and environmentally sustainable.

Challenges in agriculture

Indian agriculture has performed fairly well during the last two decades in terms of record production, diversification towards high value horticulture etc. However, the sector is currently facing some challenges. Some of them are:

Climate Change

- **Rising temperature** along with increased **occurrences of extreme weather** conditions have made climate change a major threat to Indian agriculture and productivity loss.
- It also results in **crop damage by increasing pest and disease** attacks.
- The increased incidence of extreme weather conditions **like flood and droughts coupled with unseasonal rains** also pose a serious threat to the standing crops.
- **Current overproduction of crops** like rice, wheat and sugarcane, has led to

rapid **depletion of the ground-water table, soil degradation and massive air pollution.**

Agricultural Waste Management

- **Crop residue burnings** in the northern states **increase the air pollution levels, create health hazards and contribute to global warming.**

Fragmented Landholdings

- **The number of farm holdings** in India has **increased** but the **area under farming has come down.**
- The **average size of holdings** has **decreased** substantially.
- **Marginal and small holdings** together constitute **86%** of total holdings in India.
- Farmers having **less than two hectares (five acres)** of land are called **small farmers** and those having **less than one hectare (2.5 acres)** are called **marginal farmers.**

Disguised Unemployment

- Agriculture sector **engages 49% of the total labour force** in the country, its contribution to overall **Gross Value Addition (GVA) is only 17%** which shows the overdependence of Indian labour force on agriculture

Food Inflation and Volatility in Food Prices

- Agriculture is heavily dependent on **rainfall and its spatial distribution**, adverse climatic conditions **disrupt both aggregate supply and supply chains**, imparting large volatility to food **inflation trajectory**.
- Inefficiencies in the **food supply chain** and **limited level of development of the food processing industry** – impact food inflation in India.
- The contribution of **food, and particularly, vegetables**, to volatility in **headline inflation** is significantly higher than non-food items.
- It is a measure of the **total inflation within an economy**, including commodities such as **food and energy prices (e.g., oil and gas)**, which tend to be much more **volatile and prone to inflationary spikes**.

Suggestions

- **Improved and effective mechanization** should be adopted for **in situ residue management** such as briquetting and conversion of wastes into fuel forms, various industrial usages and recent intervention of microbial decomposing solution etc.
- There is a need for **consolidation of landholdings** through land market reforms to increase farm productivity in the country.
- **Post-harvest loss can be minimized** by development of cold storages, warehousing, packaging and cold transport chain infrastructure.
- **Better Post-harvest loss-management** and a revamp of co-operative

movement through formation of **Farmer Producer Organisations (FPOs)** can arrest the volatility in food prices and farmers' income.

- India can move up in the **global agricultural value chain** by increasing its share of **processed food exports**.
- India needs to **abide with sanitary and phytosanitary (SPS) norms** to gain market access in European union and USA.
- A **mechanism can be devised to raise awareness** among potential exporters on the changing standards which will help them get the **phytosanitary certificates**.
- **Biotechnology and breeding** should be used in developing **eco-friendly, disease-resistant, climate-resilient, more nutritious and diversified crop varieties**.
- **Wider use of digital technology and extension services** will be helpful in information sharing and generating awareness among the farmers.

Major Achievements in agriculture

- **Record Production of Foodgrains:** The average production of foodgrains has increased significantly in the last decade due to several reasons such as:
 - Higher agriculture credit, public and private investment, increased usage of quality seeds and fertilisers, expansion of acreage under irrigation and increase in cropping intensity.
- **Diversification towards Horticulture Crops:**
 - Currently it accounts for **around 35% of total value** of crop output in the agriculture sector.
 - The growth in horticulture production has been almost **equally driven by growth in area and productivity** as against largely productivity driven growth in the case of foodgrains.
- **Growing Importance of Allied Activities:**

- Indian livestock sector attained a **record growth of 6.6 per cent** during the **last decade (2010-19)** with India emerging as a **major producer of milk, egg and meat in the world.**
- Livestock is emerging as an important source of stable livelihood for not only the small and marginal farmers but also the landless labourers.

- **Dynamics of Agriculture Trade:**
- The agriculture and allied sector contributed to **14.2 per cent of the total exports** from India in 2020-21.
- India's share in global trade of agricultural and allied sector products has doubled from **1.1 per cent in 2000 to 2.2 per cent in 2018.**

BRENT AT 7-YEAR HIGH: HOW ARE ECONOMY, MARKETS AND INVESTORS IMPACTED?

Oil Prices are at their highest levels since 2014.

Reasons for crude price rise

- **Problem between Russia and Ukraine:** If the Russia-Ukraine crisis escalates crude oil prices will further rise.
- **The attack by Yemen's Houthis on fuel trucks in Abu Dhabi.**
- **Iraq-Turkey pipeline:** Explosion in Turkey shut down a key oil pipeline from Iraq.
- The key oil producing countries have kept **supply on a gradually increasing** schedule in spite of the **sharp increase in global crude prices.**
- **OPEC (Organization of the Petroleum Exporting Countries) decided to increase** overall daily production by **only 400,000 barrels**, even though its own prediction is **for demand to rise by 4.15 million barrels per day in 2022.**

Impact on Indian Economy

- The rise in crude prices poses **inflationary, fiscal, and external sector risks.**
- Crude oil-related products have a **direct share of over 9% in the WPI (wholesale price index) basket.**

- WPI captures the **average movement of wholesale prices of goods** and is primarily used as a GDP deflator.
- It is published by the Economic Adviser in the **Ministry of Commerce and Industry.**
- Rising oil prices will impact the **current account deficit.**
- It occurs when the **total value of goods and services a country imports exceeds the total value of goods and services it exports.**
- The rise in **crude oil prices** is also expected to **increase the subsidy on LPG and kerosene**, pushing up the subsidy bill.

Organization of the Petroleum Exporting Countries (OPEC)

- It is an intergovernmental organization or cartel of **13 countries.**
- Five in the Middle East (Western Asia), seven in Africa, and one in South America.
- **Founded: 1960 in Baghdad.**
- **Headquarter: Vienna, Austria.**
- **Aim:**
- **Coordinate and unify** the petroleum policies of its member countries.
- **Ensure the stabilization of oil markets**, in order to secure an efficient, economic and regular supply of petroleum to consumers, a steady income to producers.

- India is not the member of OPEC.

LABOUR PRODUCTIVITY TRENDS IN ASIA AND THE PACIFIC HIGHLIGHT UNEVEN COVID-19 IMPACTS

Recently, Labour productivity improved across industries between 2008-09 & 2018-19, but data shows impact was uneven.

Arthur Lewis model of development

- In 1954, **Arthur Lewis**, presented a model to explain economic development in **developing countries**.

Stages in the Arthur Lewis model

- Lewis posited there was **surplus labour** in agriculture in developing countries.
- As these economies flourish, labour would move from **agriculture to manufacturing**.
- Agriculture labour productivity would improve and eventually **wages** would increase in agriculture and fall in manufacturing, bringing parity.

India reinforcing Lewis's argument about labour productivity

- **Employment** in Indian agriculture is falling and labour productivity is rising. However, the improved productivity is not due to the **technological changes**.
- Data from the capital (K), labour (L), energy (E), materials (M) and service (S) inputs (**KLEMS**) database, released by the Reserve Bank of India shows that there has been no significant capital investment in agriculture either.
- Labour productivity improved across industries between 2008-09 and 2018-19, but data shows that the impact was not even.
- In nine of **27 sectors**, the rise in labour productivity accompanied a fall in employment. The output per worker improved as fewer people were employed.

HOW HIGH TARIFFS ON ELECTRONIC GEARS MAY NEGATE PLI GAINS

India's policy of adopting high tariffs on the import of electronics components to reduce risks from global competition may prove to be counterproductive to its schemes aimed at increasing domestic production of electronic products.

Why Import Tariffs are Counterproductive?

- Companies which have extensive **global value chains** are reluctant to enter India when tariffs for components are high.
- The large **electronics market of India** may look attractive, but it is small in global terms.

- Moreover, India does not produce about 50% of the components on which **tariff has been increased**.
- Hence, the **impact of tariffs** is likely to be adverse on India's competitiveness

India's Performance in Global Electronics Market:

- India, China, Vietnam, Mexico and Thailand, encourage the **domestic production of electronic goods** in their geographies by adopting strategies like:
 - Attracting **foreign direct investment**.

- Improving domestic capabilities and competitiveness.
- **Increasing exports** and then linking their markets with global value chains.
- Since 1980, China has improved its ranking in terms of office and **telecom equipment export** from 35 to 1.
- Vietnam has become the **eighth largest exporter** in 2019.
- Mexico has steadily risen from 37th position in 1980s to 11th place.
- **Thailand**, which ranked 45 in 1980 has also consolidated its position in the top 15 **electronic product exporters**.
- **India**, which started at 40th position in the 1980s has gained and reached 28th position by 2019.

Impact of Import Tariffs on Electronics Industry:

- One major difference between Indian and rest of the countries is **heavy reliance on tariffs**.

- It is due to such high tariffs that **investors** and **electronic component makers** from global markets shy away from India.
- Despite the size of the Indian economy, its participation in **exports and international trade** has remained low.
- In the case of mobile phones, the size of the **domestic market** is expected to increase by \$55 billion I in 2025-26, whereas the **global market** is expected to reach \$625 billion by the same time.
- At present, the Indian domestic market is about **6.5 % of the global market**.
- India's market share is not attractive enough for FDI to choose it as a location primarily on the basis of its domestic market, as Indian policies result in **cost inefficiencies** which create obstacles to accessing a much larger global market.
- India must keep its tariff at a bare minimum to ensure it remains competitive among its peers in the **Asian market**.

RBI EASES FACTORING REGULATION RULES TO ENABLE MORE FIRMS TO PARTICIPATE IN THE BUSINESS

Recently, the Reserve Bank of India (RBI) eased factoring rules to enable more firms to participate in the business.

- **Factoring** is a transaction in which an entity can **sell its receivables** to another entity to **fulfill immediate working capital or cash flow requirements**.
- The buyer who purchases the receivables from the business later collects cash from the party that owes these bills.

Key Changes:

- RBI permitted all existing non-deposit-taking NBFC-Investment and Credit Companies (NBFC-ICCs), with asset size of Rs 1,000 crore and above, to undertake factoring business.
- The rules **permit Trade Receivable Discounting System (TReDS)** to file the particulars of assignment of receivables transactions with the **Central Registry** on behalf of the Factors for operational efficiency.
- **TReDS** is an **electronic platform** for facilitating financing of trade receivables of MSMEs.

- Other NBFC-ICCs can also undertake factoring business by registering as NBFC-Factor.

SEBI LAUNCHES 'SAAĀTHI' MOBILE APP FOR INVESTOR EDUCATION

Recently, the Securities and exchange board of India (SEBI) launches SaaĀthi mobile app for investor education.

- **Aim:** To create awareness among investors about the basic concepts of the securities market.

It will also explain about **trading** and **settlement**, mutual funds (MF), recent market developments, investor grievances redressal mechanism, etc.

INDIAN MISSIONS CAN POPULARISE NATIONAL SINGLE WINDOW SYSTEM

Recently, the Union Commerce and Industry Minister commented on the National Single Window System (NSWS).

National Single Window System (NSWS):

- NSWS is a **digital platform** providing a **one-stop solution to investors to apply for approvals**.
- **Developed by:** Department for **Promotion of Industry and Internal Trade (DPIIT) and Invest India**.
- Both of these bodies are under the **Ministry of Commerce and Industry**.

- Currently, NSWS supports approvals from **32 Central Departments and 14 State governments**.

Objectives of NSS:

- To establish a **single-window mechanism by integrating the services** provided by various Central Ministries, Departments, and State Governments.
- To **provide a one-stop-shop** for procuring pre-establishment and pre-operation approvals and permits required to establish a business in India.

INCOME OF POOREST FIFTH PLUNGED 53% IN 5 YRS; THOSE AT TOP SURGED

Recently, **ICE360 Survey 2021** was conducted by People's Research on India's Consumer Economy.

Highlights:

Our books for **General Studies, CSAT, Sociology, Political Science and International Relations** are available @CrackingIASbooks.com

- Pandemic brought economic activity to a standstill for at least two quarters in 2020-21 and resulted in a **7.3% contraction** in GDP in **2020-21**.
- It hit the urban poor most and eroded their household income.
- **Richest 20% of households** have, on average, added more income per household and more pooled income as a group in the past five years.
- Exactly the opposite has happened for the **poorest 20% of households**.
- There has been a rise in the share of poor in cities.

Splitting the Population

- Poorest 20% (first quintile) witnessed the **biggest erosion of 53%**
- The second-lowest quintile (lower middle category), too, witnessed a decline in their household income of 32% in the same period.
- Quantum of erosion reduced to 9% for those in the middle-income category.
- The top two quintiles: **upper-middle (20%) and richest (20%)**, saw their household income rise by **7% and 39%** respectively.

GOVT TESTING UPI LITE TO ALLOW PAYMENTS WITHOUT INTERNET

The National Payments Corporation of India is testing a solution to allow Unified Payments Interface (UPI) based digital pay without an internet connection.

National Payments Corporation of India (NPCI)

- It is an initiative of the **Reserve Bank of India (RBI)** and **Indian Banks' Association (IBA)**.
- It is an umbrella organisation for operating retail payments and settlement systems in India.
- **Launch 2008**.
- NPCI has **ten core** promoter banks: State Bank of India, Punjab National Bank, Bank of Baroda, Canara Bank, Bank of India, HDFC Bank, Citibank, HSBC, and ICICI Bank.
- It is a **non-profit organisation** set up under the provisions of Section 25 of Companies Act, 1956 (now, Section 8 of Companies Act, 2013).
- **Aim:** To provide infrastructure to the whole banking industry, both physical and electronic payment and settlements system.

Objective

- The main objective of NPCI is to consolidate, combine, and integrate multiple systems for payment with different service levels into one nationwide **standard uniform** and business process for all the **retail payment** transactions.
- It is set up under the guidance and support of the **central bank RBI** and the Indian Banks Association.
- To design and facilitate an **affordable payment process or mechanism** so that the common man who makes retail payments on a day-to-day basis benefit from the process by saving the cost and time.
- It exists in designing and implementing a **nationwide mechanism** that is affordable for retailers to use on a day-to-day basis without losing credibility and making sure the same process is standardized across the country.

Service offered by NPCI

- National Financial Switch (NFS)
- Immediate Payment Service (IMPS)
- Aadhaar-enabled Payment Service (AePS)
- Cheque Truncation System (CTS)

- National Automated Clearing House (NACH)
- Unified Payments Interface (UPI)
- National Electronic Toll Collection (NETC)

CRYPTOCURRENCY TUMBLER

- It is a service offered to mix potentially identifiable or "**tainted**" cryptocurrency funds with others, so as to obscure the trail back to the fund's original source.
- This is usually done by **pooling** together source funds from multiple inputs for a large

- and random period of time, and then spitting them back out to destination addresses.
- It has arisen to improve the anonymity of cryptocurrencies usually **bitcoin**, since the currencies provide a public ledger of all transactions.

INDIA'S GOLD DEMAND SKYROCKETS TO 797.3 TONS IN 2021: WORLD GOLD COUNCIL

As per World Gold Council, Gold demand in India is expected to increase in 2022.

World Gold Council

- It is the **market development organisation** for the gold industry.
- **Aim:** to stimulate and sustain demand for gold.
- **Headquarter:** London, United Kingdom
- It works across **all parts of the industry**, from gold mining to investment.
- It is an association whose **members comprise the world's leading gold mining companies**.

How does gold impact the economy?

- The gems and jewellery industry which **contributes around 7 percent of the country's gross domestic product (GDP)** and **15.71 percent to India's total merchandise exports**.

Gold mining

- It provides significant **sustainable socio-economic development to India**.
- It brings **infrastructure investment** to a region.

Gold refining

- India's total refining capacity is now, significantly **more than the average annual gold imports**.
- But much of the **additional capacity remains under-utilised**, largely because of the limited availability of recycled material.

Current account deficit

- India's huge gold imports is also **partially responsible** for it since the **second largest part** of the import bill is gold.

Exports

- Gold industry is considered to play a vital role in the economy as it **contributes a major chunk to the total foreign reserves of the country.**

Growth of the gold loan industry

- **Pledging gold as collateral** has been an ever-present feature of India's gold market.

There are **two types of gold loan providers** - formal (banks and non-banking finance companies) and informal (money lenders and pawnbrokers)

GOVERNMENT NOTIFIES PHASE II OF CAPITAL GOODS SCHEME

Recently, Government of India has notified the second phase of the Scheme on Enhancement of Competitiveness in the Indian Capital Goods Sector.

Phase II of Capital Goods Scheme:

- **Launched in:** January 2022.
- **Aim:** Providing assistance for common technology development and services infrastructure.
- **Objective:** To expand and enlarge the impact created by Phase I pilot scheme, thereby providing greater impetus through creation of a **globally competitive capital goods sector.**

Enhancement of Competitiveness in the Indian Capital Goods Sector:

- **Launched by:** Ministry of Heavy Industries
- **Aim:** To address the technological obsolescence, limited access to quality industrial infrastructure and common facilities.

Objectives:

- To encourage **technology development** through joint participation with academia, industry R&D institute and government.
- To create **common physical infrastructure** for enhancing the competitiveness of the local industry.

Components of the Scheme:

- **Identification of technologies** through technology innovation portals.
- Setting up of four new **Advanced Centres of Excellence** and augmentation of existing centres.
- **Promotion of skilling** in capital goods sector.
- Setting up of four **Common Engineering Facility Centres** and augmentation of existing centres.
- Augmenting existing Testing and Certification Centres.
- Setting up of 10 **industry accelerators** for technology development.

STAGE SET FOR REVERSE REPO NORMALISATION: SBI ECOWRAP

Recently, the State Bank of India (SBI) has stated that it believes the stage is set for a reverse repo normalization.

- SBI is the largest public sector bank in India.

Genesis:

Repo (Repurchasing Option) rate and Reverse repo rate:

- **Repo rate** is the interest rate at which the **Central Bank grants loans to commercial banks.**
- The **reverse repo** is the **interest rate at which Central bank take loans from Commercial banks.**
- Repo and Reverse repo are interlinked. **Repo rate is always higher than Reverse repo.**
- For example: currently, the RBI's repo rate is at 4% and reverse repo rate is at 3.35%.

Repo & reverse repo effect:

- **Loose monetary policy:**
 - **Loose monetary policy or expansionary monetary policy** is aimed to increase the production and employment.
 - **Central bank decreases the repo rate** to increase the availability of money and credit in the economy.
- **Tight monetary policy:**
 - **Tight monetary policy or Contractionary monetary policy** is aimed to suck the excess money supply to reduce the inflation.

- Central bank increases the repo rate to decrease the availability of money in the economy.

Reverse repo normalisation:

- Literally, **normalization is nothing but going back to previous normal stage.**
- During Covid-19 pandemic, **central bank (Reserve Bank of India in India)** had decreased the Repo rate and Reverse repo rate for increasing money supply in the economy and promoting business.
- Now, after situation is getting normal, the central banks throughout the world are normalizing the reverse repo rates or increasing reverse repo rate.
 - For example: **SBI's report expects the reverse repo will go up from 3.35% to 3.75%, while the repo rate continues to be 4%.**
- Simply, **the Reverse repo normalisation means, the reverse repo rates will go up.**
 - It means loans will become more costly, due to increased cost of debt service.
 - **Reverse Repo normalization** is nothing but a move of central bank from **Loose monetary policy to Tight monetary policy.**

SBI LISTS MAIDEN ISSUE OF \$300 MILLION FORMOSA BONDS ON INDIA INX

Recently, State Bank of India (SBI) issued \$300 million Formosa bonds.

Formosa Bond:

- A Formosa bond is a bond which is **issued in Taiwan but denominated in a currency other than the New Taiwan Dollar.**
- They are issued by the Taiwan branches of publicly traded overseas financial institutions.

- They fall under the **Eurobond category of bonds**, as they are denominated by a currency other than that of the country in which they are issued.
- They can be issued by **subsidiaries of foreign companies** which already operate in Taiwan.
- These bonds are listed and traded on the **Taipei Exchange.**



CHINA CONTINUES ITS BELLIGERENCE, RENAMED 15 PLACES IN ARUNACHAL; INDIA SHOULD EXPECT MORE SUCH ACTIONS, SAY EXPERTS

Recently, China's Ministry of Civil Affairs announced that it had standardised the names of 15 places in Arunachal Pradesh, days ahead of the new border law coming into force.

- The Indian government rejected the renaming of places and asserted that the state has always been and will always be an integral part of India.

Highlights:

- China **claims 90,000 sq. km of Arunachal Pradesh** as its territory and calls the area **Zangnan** in the Chinese language.
- It also makes repeated references of Andhra Pradesh as **South-Tibet**.

Genesis of the Dispute:

The People's Republic of China disputes the **legal status of the McMahon Line**.

- China has never recognised the McMahon Line and the **Line of Actual Control (LAC)** has remained the **de-facto border**.
- The McMahon Line was drawn from the eastern border of Bhutan to the Isu Razi pass on the China-Myanmar border.
- It was named after **Henry McMahon**, the chief British negotiator at Shimla.
- China **claims territory to the south of the McMahon Line**, lying in Arunachal Pradesh.
- China also bases its claims on the historical ties that have existed between the monasteries in Tawang and Lhasa.

The Simla Convention, was an ambiguous treaty concerning the **status of Tibet**.

- The Simla convention was negotiated by representatives of the **Republic of China, Tibet and Great Britain** in Simla in 1913 and 1914.
- It deliberated on two themes – **the status** (autonomy under suzerainty of China) and the **limits of Tibet**.
- It provided that Tibet would be divided into **Outer Tibet and Inner Tibet**.
- **Outer Tibet** would remain in the hands of the Tibetan Government under Chinese suzerainty, but China would not interfere in its administration.
- **Inner Tibet** would be under the jurisdiction of the Chinese government.
- The convention defines the boundary between Tibet and China proper and that between Tibet and British India (MacMahon Line).
- The **Chinese representative did not consent to the Simla Convention**.
- The claim was that Tibet had no independent authority to enter into international agreements.

New Border Law:

- China adopted a new law on October 2020, on the **protection and exploitation of the land border areas**.
- The law is **not meant specifically for the border with India**.
- China shares its 22,457-km land boundary with 14 countries.

- India's border is the **third longest** after the borders with Mongolia and Russia.

Provisions of the New Law:

- It empowers People's Liberation Army (PLA) and Chinese People's Armed Police Force to **maintain security along the border**.
- This responsibility includes cooperating with local authorities in combating illegal border crossings.
- As per the law, the People's Republic of China shall set up **boundary markers** on all its land borders to clearly mark the border.
- It gives **more powers to the People's Liberation Army (PLA) and state agencies** to:
 - use civilians in border areas as a first line of defence
 - to strengthen infrastructure
 - to build more border towns
- **It prohibits** any party from indulging in any activity in the border area which would **endanger national security** or affect China's friendly relations with neighbouring countries.
- It includes construction of any permanent buildings by any person without authorisation from the concerned authority.
- It also **empowers citizens and local organisations** to protect the border infrastructure, maintain security and stability of borders.
- It also lays down four conditions under which the state can **impose emergency measures**, including border shutdown.

CHINA'S NEW LAND BORDER LAW AND INDIAN CONCERNS

Recently, China's new law on land borders came into effect.

What is the new law?

- It mandates the state to take **measures to strengthen border defence**, support economic and social development in border areas.
- The law lays down **conditions** under which the state can **impose emergency measures**, including border shutdown.
- The law **prohibits construction** of permanent infrastructure **close to the border without China's permission**.
- The law emphasises the responsibilities of China's provinces, government departments and civilians to play a **coordinated role to tackle various national challenges**.
- The law contains **principles governing water resources of cross border rivers**.

Implications for India:

- Distrust coupled with ambiguous and aggressive statements are a potent mix likely to cause armed conflicts in the future.
- The law prohibits the construction of permanent facilities 'near' China's border without permission from Chinese authorities.
- The **vague wording** could be interpreted to include both sides of the border, creating the **potential for additional friction**.
- By emphasising on the development of border towns and the role of civilians, China may **intend to expand or accelerate civilian settlement** in areas bordering India, Nepal and Bhutan.
- This is a part of the **salami slicing tactics** used by China in the maritime domain, especially in the South China Sea.

- China has turned a **border dispute into a sovereignty dispute**, rendering it more **intractable**.
- This has brought in the dynamics of ultranationalism and polarisation.
- China, may **prevent horse-trading** or give and take of territories.

Recommendations for India:

- Written agreements related to **mutually agreed settlements**, ratified by the Parliaments of both countries, **needs to supersede any other law** related to borders.
- **Continuous engagement** with China with an aim **to resolve** the standoff **peacefully**.
- Enhanced **engagement with neighbouring countries** so that geographic incursion by China can be curtailed.
- **More involvement in QUAD like groupings** and focus on security calculus to be a part of such groupings.
- Enhanced **engagement with Russia** to secure India-Russia bilateral relationship.
- **Development of infrastructural connectivity's** in mission mode in all border areas— be it road, rail, water or air.
- In addition to axial connectivity's, more focus on **lateral connectivity's** needs to be given.
- This is most urgently needed to come out of valley-based restrictions on deployment of forces and resources.
- **Speeding up of the alteration** in revised format as against current land centric approach.
- Development of **dual-use infrastructure**.
- Dual use products and technologies are used for civilian purposes which also have military applications.

- Undertake **mountaineering expeditions** with increased frequency

along with measures which cement our claim on Indian borders.

INDIA VOTES IN FAVOUR OF UNSC RESOLUTION TO RENEW MANDATE OF COUNTER-TERRORISM COMMITTEE EXECUTIVE DIRECTORATE

By a resolution, the UN Security Council (UNSC) renewed the mandate of the Counter-Terrorism Committee Executive Directorate (CTED) until 2025.

- India had also voted in favour of UNSC resolution to renew mandate of CTED.
- India is chair of the **Counter Terrorism Committee (CTC)** of UN Security Council from 1st January 2022 for next one year. The CTC is assisted by the CTED.

Counter Terrorism Committee (CTC):

- **After 9/11 attacks** of 2001, UNSC adopted a resolution, **requiring all states to take specific measures to combat terrorism.**
- To implement and monitor this resolution, CTC was constituted in 2001.
- **Function:** CTC works for countering terrorism in the world. It also monitors states' implementation of the resolution.
- **Composition of CTC:** All 15 sitting UNSC members are represented in CTC.

Counter-Terrorism Committee Executive Directorate (CTED):

- **Headquarter:** New York, USA

- CTED was established by UN Security Council Resolution in 2004.

Function of CTED:

- **CTED is an expert body to support UNSC's CTC.**
- **It conducts country visits on the CTC's behalf to assess Member States' counter-terrorism efforts.** It includes assessment of progress made, remaining shortfalls, and priority areas for technical assistance needs, to identify terrorism-related trends and challenges, tec.
- **It promotes the good practices** in the implementation of relevant Security Council resolutions.

Composition of CTED:

- It consists of around 40 experts in field of security and law, led by an executive director.
- Currently, CTED is divided into two sections:
 - Assessment and Technical Assistance Office (ATAO)
 - Administrative and Information Office (AIO).

CHINA CONSTRUCTING BRIDGE ON PANGONG TSO

China is building a new bridge on Pangong Tso near the Line of Actual Control (LAC) in eastern Ladakh.

- The bridge is being constructed on more than 20 km east of **Finger 8** area on the lake's north bank.

Pangong Lake:

- Pangong Lake is also known as **Pangong Tso**.
- It is an **endorheic lake** situated in the **Himalayas** at a height of 4350 m.
- It is 134 km long, extending from India to China.

- It is famous for its saline water.
- **One third area** of the lake lies within India. Other two third portion lies with **Tibet** and is controlled by China.
- The lake is in the process of being identified under the **Ramsar Convention** as a wetland of international importance.

This will be the first trans-boundary wetland in South Asia under the convention.

BRITISH SIKH ARMY OFFICER MAKES HISTORY WITH SOLO CLIMB TO SOUTH POLE

A British-born Indian Sikh woman has made history by becoming the first woman of colour to complete a solo expedition to the South Pole.

- **Captain Harpreet Chandi**, a 32-year-old Indian-origin British Sikh Army officer and physiotherapist also known as **Polar Preet**, has created history by becoming the first woman of colour to complete a solo unsupported trek to the South Pole.

- The South Pole, also known as the **Geographic South Pole, Terrestrial South Pole** or **90th Parallel South**, is one of the two points where Earth's axis of rotation intersects its surface.
- It is the **southernmost point on Earth** and lies on the opposite side of Earth from the North Pole, and it lies in Antarctica.
- The exact location of the South Pole is constantly moving, due to plate tectonics.

INDIA TO ACQUIRE LITHIUM, COBALT MINES IN SOUTH AMERICA, AUSTRALIA

India is working on acquiring mines of strategic minerals such as lithium and cobalt in producing countries like Australia, Argentina, Bolivia and Chile.

- **Aim:** To ensure **India's mineral security** as well as to attain **self-reliance** in the area of critical and strategic minerals.
- This will fulfil the requirements of crucial sectors **especially for renewable energy (RE) and e-mobility sectors**.

Khanij Bidesh India (KABIL)

- The Mines Ministry has created a **joint venture (JV) company Khanij Bidesh India (KABIL)** with participating interest from National Aluminium Company (NALCO), Hindustan Copper (HCL) and Mineral Exploration Corporation (MECL).
 - Each company participation is 40:30:30, respectively.

- **Vision:** To promote **international cooperation** and seeking **investment opportunity** to build business partnership in strategic mineral sector.

Objective

- Identify, explore, **acquire, develop** overseas mineral assets of critical and strategic nature such as Lithium, Cobalt etc.
- To support **“Make in India”** and **Atmanirbhar Bharat** Abhiyan.

Strategic mineral and their Importance

- These are **metals and non-metals** that are considered vital for the economic well-being of world.
- These are important for **socio- economic development** of nation.
- Strategic minerals are **needed** for military, industrial or commercial purposes that

are **essential** to renewable energy, national defense equipment, medical devices, etc.

- **Some examples of strategic minerals** are tin, silver, antimony, cobalt, manganese, tungsten, zinc, titanium, platinum, chromium, bauxite, and diamonds.

India’s status

- The **paucity of strategic minerals** in India has been a serious concern for the last several decades.
- India is highly dependent on **imports** for the supply of **strategic minerals**.
- India is having resources worth 87.39 million tonnes of **Tungsten**, 24.63 million tonnes of **Vanadium**, 189 million tonnes of **Nickel**.
- According to Atomic Minerals Directorate (AMD) in **Marlagalla–Allapatna** area in Mandya district of **Karnataka** there is presence of **Lithium resources of 1,600 tonnes** (inferred category).

INDIA’S NON-COVID IMMUNISATION PROGRAMME DECLINED -UNICEF

As per the report of UNICEF, India’s non-Covid immunisation programme declined since the onset of the COVID-19 pandemic.

Global Scenario of Immunisation in 2020:

TB vaccine

- Among the major economies, India was behind Mexico, Brazil and the United Arab Emirates in terms of the drop in TB vaccine.
- India also fared worse than all **South Asia nations** with even Pakistan and Afghanistan increasing coverage during 2020.
- **Best Performers:** Bangladesh and Sri Lanka continued to administer TB vaccine.

Hepatitis-B

- India was behind Brazil and Indonesia.

DPT (diphtheria, pertussis and tetanus) vaccination

- Only Pakistan and Nepal fared worse than India in the **South Asian region**.

Data on India:

- **Decline in Polio Vaccine:**
 - India sees a sharpest drop in **polio vaccination** since 1990s.
 - The administration of the third dose of polio vaccine for children aged 12-23 months

declined five percentage points in 2020, compared to 2019.

- **DPT vaccine:** First dose for children aged 12-23 months fell by seven percentage points.
- **Tuberculosis (TB) vaccine:** It was also down by seven percentage points compared to last year.
- **Rotavirus Vaccine:** The rotavirus vaccine coverage for children aged 12-23 months went up 29 percentage points from 53 per cent to 82 per cent.
- **Pneumococcal Vaccine:** Pneumococcal uptake increased from 15 percent to 21 per cent between 2019 and 2020.

Reasons for the Decline:

- **Rural Health Manpower:** One of the primary reasons for the decline seems to be set backs to **rural health manpower** and its impact on **rural health programmes**, including the government's vaccination drives.
- **Health and Nutrition Days:** The total number of **health and nutrition days** (HNDs) held in thousands of villages declined drastically in 2020 as compared to 2019.
- **Asha (Accredited Social Health Activist) Workers:** There was a fall in the number of **ASHA workers** in Indian villages.

Universal Immunisation Programme:

- **Immunization Programme** in India was introduced in 1978 as 'Expanded Programme of Immunization' (EPI) by the Ministry of Health and Family Welfare.
- In 1985, the programme was modified as '**Universal Immunization Programme**' (UIP)
- **Government of India** provides several vaccines to infants, children and pregnant women through UIP.

Vaccines Provided under UIP:

BCG

- BCG stands for **Bacillus Calmette-Guerin vaccine**.
- It is given to infants to protect them from **tubercular meningitis** and disseminated TB.

OPV

- OPV stands for **Oral Polio Vaccine**.
- It protects children from **poliomyelitis**.

Hepatitis B vaccine: Hepatitis B protects from **Hepatitis B virus infection**.

Pentavalent Vaccine

- Pentavalent is a combined vaccine to protect children from five diseases:
 - Diphtheria, **Tetanus**, **Pertussis**, Haemophiles influenza type b infection and **Hepatitis B**.

Rotavirus Vaccine: It gives protection to infants and children against **rotavirus diarrhoea**.

PCV

- PCV stands for **Pneumococcal Conjugate Vaccine**.
- It protects infants and young children against disease caused by the **bacterium Streptococcus pneumoniae**.

FIPV

- It stands for **Fractional Inactivated Poliomyelitis Vaccine**.
- It is used to boost the protection against poliomyelitis.

Measles/ MR vaccine

- It is used to protect children from **measles**.
- In some cases, Measles and Rubella, a combined vaccine is given to protect from Measles and Rubella infection.

JE vaccine

- JE stands for **Japanese encephalitis vaccine**.
- It gives protection against Japanese Encephalitis disease.

Tetanus and Adult Diphtheria (Td) Vaccine

- TT vaccine has been replaced with Td vaccine in UIP to limit the waning immunity against diphtheria in older age groups.

CABINET APPROVES MOU BETWEEN INDIA AND NEPAL FOR CONSTRUCTION OF BRIDGE OVER MAHAKALI RIVER AT DHARCHULA (INDIA) – DHARCHULA (NEPAL)

Recently, the Union Cabinet approved the Memorandum of Understanding (MoU) between India and Nepal for construction of bridge over Mahakali River at Dharchula (India)- Dharchula (Nepal).

Mahakali River:

- The Mahakali River is also known as the **Sharda River or Kali River**.
- It originates at **Kalapani (Uttarakhand)** in

the Himalayas, and joins **Ghaghara River** in Uttar Pradesh.

- It also decides Nepal's western border with India.
- Tributaries:
 - **Left side:** Chameliya, Ramgun in Nepal.
 - **Right side:** Dhauli, Gori, Sarju, Ladhiya rivers in Uttarakhand.

'INDIA TO SURPASS JAPAN AS ASIA'S 2ND LARGEST ECONOMY BY 2030'

According to a recent report, India is likely to overtake Japan as Asia's second-largest economy by 2030 when its GDP is also projected to surpass that of Germany and the UK to rank as world's No.3.

Highlights:

- India's nominal GDP measured in USD terms is forecast to rise from USD 2.7 trillion in 2021 to USD 8.4 trillion by 2030.
- Currently, **India** is the **sixth-largest economy** in the world, behind the US,

China, Japan, Germany and the United Kingdom.

- The key growth driver is rapidly **growing domestic consumer market**.
 - This will increase consumption expenditure, thereby consumer spending.
- The **digital transformation of India** is expected to accelerate the growth of e-commerce, changing the retail consumer market landscape over the next decade.
 - It will make India one of the most important **long-term growth markets** for multinationals in a wide range of industries.

- **Foreign Direct Investment:**
 - It is being boosted by large inflows of investments from global technology Multinational Companies (MNCs) that are attracted to India's large domestic consumer market.

Government initiatives to boost economy

- The government is considering a **series of measures to boost the economy**, including:
 - offering up to ₹3 lakh crore in incentives spread over six years to create global supply chains in some sectors,
 - **tariff protection** to key industries
 - **relaxation in foreign investment rules**
 - schemes aimed at the urban unemployed
- **PM Garib Kalyan Yojana:**
 - Mantri Garib Kalyan Yojana is a comprehensive **relief package** of Rs 1.70 Lakh Crore Yojana for the poor to help them fight the battle against Corona Virus.
 - The scheme has been extended to add **free vaccination for all**.
- **Atamirbhar Bharat Abhiyan:**
 - The government announced a ₹20 lakh crore Atamirbhar Bharat Abhiyan (Self-reliant India Initiative) package.
 - It also included **monetary measures** by the Reserve Bank of India (RBI).
- **Make in India**
 - It focuses on **reducing import dependence**, increasing domestic capacity, and modernising the armed forces.
 - **Aim:** Increasing domestic manufacturing capacity, promoting

local Micro, Small, and Medium Enterprises (MSMEs).

- **National Policy on Electronics 2019 (NPE 2019)**
 - This intended to transform the country into a **global manufacturing hub**.
- **Production-linked incentive (PLI) scheme:**
 - **Aim:** To entice multinational firms to **relocate their manufacturing capacity to India**.
 - It provides eligible companies with incentives ranging from 4-6 percent on incremental sales of mobile phones manufactured in India over a five-year period beginning with the base year (2019-20).
- **PLI Scheme for Telecom:**
 - PLI scheme for telecom and networking products was implemented to **reduce import dependency** and boost domestic production and exports.
 - **Aim:** To turn India into a **global manufacturing hub** for telecom equipment by encouraging telecom players to invest in India and incentivizing both foreign and domestic investments.
- **Telecom sector reforms:**
 - **Aim:** To boost employment, growth, competition, and consumer interests.
 - The reforms include rationalisation of adjusted gross revenue, the rationalisation of bank guarantees (BGs), and the encouragement of spectrum sharing.
- **Deep Ocean Mission (DOM):**
 - The Indian government approved the **Deep Ocean Mission (DOM)**, with a budget outlay of Rs. 4,077 crore (US\$ 553.82 million) over the next five years.

- DOM is an Indian initiative to **undertake the deep ocean exploration focused on India's exclusive economic zones and continental shelf.**
- **Initiatives by Reserve Bank of India:**
 - The Reserve Bank of India (RBI) announced that the **investment limit for FPI** (foreign portfolio investors) in State Development Loans (SDLs) and government securities (G-secs) would **remain unchanged.**
- **Roadmap 2030:**
 - It is a joint initiative by **India and United Kingdom** to collaborate and combat climate change by 2030.
 - India is focusing on **renewable sources to generate electricity.**
- **Reforms in Aerospace:**
 - The government has announced a number of reforms to the aerospace and defence manufacturing policies.

- This is to provide a **boost to Indian defence equipment manufacturer.**
- **Inclusive economic growth:**
 - ₹20 lakh crore stimulus was announced by the government.
 - It has immensely **helped the rural poor**, especially with their active involvement in MGNREGS [Mahatma Gandhi National Rural Employment Guarantee Scheme].
- **NIP [National Infrastructure Pipeline]:**
 - Implementation of ₹111 lakh crore allocated for the **NIP**
 - NIP is a government exercise to provide **world-class infrastructure to citizens and improving their quality of life.**
 - **Aim:** To improve project preparation and attract investments into infrastructure.

INDIA JOINS HIGH AMBITION COALITION (HAC) FOR NATURE AND PEOPLE

Recently, India Joins High Ambition Coalition (HAC) for Nature and People.

- It is group of more than **70 countries** encouraging the adoption of the global goal to protect 30x30.

- **Aim:** protecting at **least 30 percent** of world's land and ocean by 2030 to halt the accelerating loss of species, and protect vital ecosystems.

INDIA-SOUTH KOREA BILATERAL TRADE

Recently, Trade talks between India and South Korea is held.

Highlights

- India and South Korea set a **bilateral trade target of \$50 billion** before 2030.

- India is aiming to address **issues of market access and non-tariff barriers** faced by Indian exporters.
- Indian exporters are facing difficulty in export of bovine meat.

- India had also raised the need to expedite the process to facilitate export of grapes, pomegranate arils and eggplants.
- Both countries agreed to impart fresh momentum to the discussions on the **Comprehensive Economic Cooperation Agreement (CEPA) upgradation negotiations**.

India – Republic of Korea Bilateral Relations (RoK)

Political relation

- Bilateral consular relations were established in 1962 which was upgraded to Ambassador level in 1973.
- RoK's **open market policies** and the **New Southern Policy** found resonance with India's economic liberalization, '**Look East Policy**' as well as "**Act East Policy**".
- **In 2015**, bilateral relationship was upgraded to '**Special Strategic Partnership**'.

Economic relation

- The India-South Korea **CEPA was signed in 2009 and became effective in 2010**.
- Major items of India's exports to Korea are **mineral fuels/oil distillates (mainly naphtha), cereals, iron and steel**.

- Korea's main export items are **automobile parts, telecommunication equipment, hot rolled iron products, petroleum refined products** etc.
- India and South Korea launched an initiative '**Korea Plus**', to promote and facilitate Korean Investments in India.
- A Korea India SME and Startup centre was launched in September 2019.

Cultural relation

- **Indian Cultural Centre (ICC)** was established in Seoul (2011) and Busan (2013).
- Various Universities in Korea offer **degree courses in Indian Philosophy, Yoga and Ayurveda**.
- Government of India granted **Visa on Arrival facility to Korean nationals** coming through 6 designated international airports in India since 1 October 2018.

Naval exercise

SAHYOG-HYEOBLYEOG

It is India, South Korea joint **anti-piracy, search and rescue exercise** was conducted in Bay of Bengal in 2018.

AFRICA50 AND POWER GRID CORPORATION OF INDIA IN JOINT DEVELOPMENT AGREEMENT, TO PIONEER AFRICA'S FIRST TRANSMISSION PPP PROJECT IN KENYA

Recently, Power Grid Corporation of India Limited (POWERGRID) has signed a Joint Development Agreement with Africa50 on a **public-private partnership basis**.

- Project entails the development, financing, construction, and operation of the

- 400kV Lessos – Loosuk and 220kV Kisumu – Musaga transmission lines under a **public-private partnership (PPP) framework**.
- Africa-50 is a pan-African **infrastructure investment platform that contributes to Africa's economic growth** by developing and investing in bankable infrastructure projects.

PAKISTAN'S FIRST-EVER NATIONAL SECURITY POLICY CITES HINDUTVA-DRIVEN POLITICS, ARMS BUILDUP KEY HURDLES TO TIES WITH INDIA

Pakistan has expressed desire to improve ties with India under its first-ever National Security Policy.

- The policy was adopted in the December 2021.

Highlights of Policy:

- A just and peaceful resolution of the **Jammu and Kashmir** dispute remains at **the core of India- Pakistan bilateral relationship**.
- The rise of Hindutva-driven politics in India is **deeply concerning and impacts Pakistan's immediate security**.
- Special attention is required to **manage border disputes** which continue to pose security threats, particularly along the Line of Control (LoC).
- Towards the immediate east bilateral ties have also been hindered as a consequence of the **unresolved Kashmir dispute**.

- Expansion of **India's nuclear triad** **disturb** the strategic balance in the region.
- It also blames India for "**ceasefire violations**" along the LoC.
- Exploitation and manipulation of **ethnic, religious, and sectarian lines** through violent extremist ideologies" cannot be allowed.
- China Pakistan Economic Corridor as a "**project of national importance**", is "**redefining regional connectivity** and providing impetus to Pakistan's economy".
- However, document doesn't talk much about **West Asia and Pakistan's partners in the Gulf, and Turkey and Saudi Arabia**.
- Document indicated that "westward connectivity" was the current viable option as "eastward connectivity is held hostage to India's regressive approach".

INDIA EXTENDS \$900 MN AID TO SRI LANKA

Recently, the Reserve Bank of India extended the financial aid to Sri Lanka.

Highlights:

- The RBI extended **currency swap facility** of \$400 million.
- **Aim:** To help Sri Lanka cope with the impact of the first wave of the pandemic.
- The **assistance** includes **deferring the payment** of \$500 million that Sri Lanka owes to the **Asian Clearing Union (ACU)**.

- ACU is a regional initiative with the **Central Banks and Monetary Authorities** of Bangladesh, Bhutan, India, Iran, Maldives, Myanmar, Nepal, Pakistan and Sri Lanka.

India -Sri Lanka Relations:

- The relationship between two countries is more than 2500 years old.
- **Trade and investment** have grown and there is cooperation in the fields of development, education, culture and defence.

- Both countries share a broad understanding on major issues of **international interest**.

Political Relations

- The **Prime Minister of India** hosted a **Virtual Bilateral Summit (VBS)** with Sri Lankan Prime Minister in September 2020.
- A **USD 15 million grant** from India for promotion of **Buddhist ties** and an inaugural international flight carrying Sri Lankan pilgrims to the sacred city of Kushinagar were announced at the VBS.

Commercial Relations

- The entry into force of the **India-Sri Lanka Free Trade Agreement (ISFTA)** in 2000 contributed towards the expansion of trade between the two countries.
- Sri Lanka remains among the largest trade partners of India in the **South Asian Association for Regional Cooperation (SAARC)**.
- In 2020, India was Sri Lanka's 2nd largest trading partner with the bilateral merchandise trade amounting to USD \$ 3.6 billion.
- India is also one of the largest contributors to **Foreign Direct Investment** in Sri Lanka.
- FDI from India amounted to about US\$ 1.7 billion during the period 2005 to 2019.

Development Cooperation

- The **Indian Housing Project** is Government of India (GoI)'s flagship grant project in Sri Lanka.
- **Aim:** To build 50,000 houses in war affected areas and estate workers in the plantation areas.
- India has so far committed to construct close to 62,500 houses in Sri Lanka.
- The **1990 Emergency Ambulance Service** is another flagship project.
- The Service was initially launched in July 2016 in Western and Southern Provinces of Sri Lanka.
- It was later expanded to all the provinces in the next phase.
- There are another 20 ongoing **grant projects** across diverse spheres.
- Construction of 153 houses and **infrastructure facilities**.
- Construction of 600 houses under **Model Village Housing Project** in 25 districts of Sri Lanka etc.

Projects under Lines of Credit

- 11 **Lines of credit (LOC)** have been extended to Sri Lanka by the **Export Import Bank of India** in the last 15 years.
- Under the LOC of USD 318 million, various projects for procurement of rolling stocks for Sri Lankan Railways, upgradation of railway tracks, setting up of railway workshop etc. are at different stages of implementation.
- A US\$ 100 million LoC for undertaking **solar projects in Sri Lanka** has been signed between the Government of Sri Lanka and EXIM Bank in June, 2021.

WHY IS INDIA CHALLENGING WTO VERDICT ON SUGAR?

India filed an appeal with the Appellate Body of the World Trade Organization (WTO) disputing a verdict

by the WTO's dispute settlement panel on sugar subsidies.

- The WTO's dispute settlement panel had ruled that India, by **subsidising sugar producers**, was **breaking rules** framed under the **General Agreement on Tariffs and Trade (GATT)** which govern international trade.

What is the Dispute?

- In 2019, **Australia, Brazil, and Guatemala complained against India at the WTO** over the **subsidies offered** by the Indian government to sugar producers.
- They argued that these subsidies, which include **both domestic subsidies as well as export subsidies**, exceed the limits imposed by WTO trade rules.
- **According to WTO rules**, subsidies cannot **exceed 10% of the total value** of sugar production.

WTO verdict

- WTO ruled that India's sugar policy was **favouring domestic producers** through subsidies to the detriment of foreign producers.
- The panel recommended that India withdraws its alleged **prohibited subsidies under the Production Assistance, the Buffer Stock, and the Marketing and Transportation Schemes** within 120 days from the adoption of this report.

What is India's stand?

- India has argued at the WTO that **it does not offer direct subsidies to sugarcane farmers** and thus doesn't break any international trade rule.

What lies ahead?

- The **WTO Appellate Body's** decision will be **considered final on the dispute**.

- In case India **refuses to comply with the decision**, it might have to face retaliatory action from other countries.
- This could be in the form of **additional tariffs on Indian exports** and other stringent measures.

Key Fact

- India is the **second-largest sugar producer** in the world after Brazil.
- It is estimated that more than **5 crore people depend on the cultivation of sugarcane** alone for their livelihood.

World Trade Organisation (WTO)

- It is an **intergovernmental organization** that regulates and facilitates international trade between nations.
- It officially commenced operations on 1 January 1995, pursuant to the 1994 **Marrakesh Agreement**.
 - The agreement developed out of the **General Agreement on Tariffs and Trade (GATT)**, supplemented by a number of other agreements on issues including trade in **services, sanitary and phytosanitary measures, trade-related aspects of intellectual property and technical barriers to trade**.
- The WTO facilitates trade in **goods, services and intellectual property** among participating countries by providing a framework for negotiating **trade agreements**, which usually aim to **reduce or eliminate tariffs, quotas, and other restrictions**.
- Headquarter: **Geneva, Switzerland**.
- Its top decision-making body is the **Ministerial Conference**, which is composed of all member states and usually **convenes biennially**.

Reports:

- **World Trade Outlook Indicator**
- **World Trade Statistical Review**
- **World Trade Report**

WTO Appellate Body

- The Appellate Body was **established in 1995** under Article 17 of the **Understanding on Rules and**

Procedures Governing the Settlement of Disputes (DSU).

- It is a standing body of **seven persons that hears appeals** from reports issued by panels in disputes brought by WTO Members.
- The Appellate Body can **uphold, modify or reverse the legal findings and conclusions** of a panel.
- The Appellate Body has its seat in **Geneva, Switzerland.**
- There is currently **no Member** in the Appellate Body.

INDIA COMMITTED TO EMERGE AS RELIABLE PARTNER IN GLOBAL SUPPLY CHAIN: PM MODI AT WEF DAVOS AGENDA 2022

Prime Minister of India participated in Davos agenda of World Economic Forum.

Highlights of speech

- India contributes **5% of global carbon usage** but it's commitment to phasing out **non-renewable energy is 100%**.
- He proposed the a **'P-3' approach**.
- The P-3 approach stands for "**pro-planet people**".
- India is promoting **'Ease of Doing Business'**. By reducing Corporate tax rate, India is aiming to be **most competitive in upcoming years**.
- India's focus is not only on easing the processes, but also on **incentivising investment and production**.
- India is **exporting essential medicines and vaccines** by following its vision of **'One Earth, One Health'**.
- **Throw away culture and consumerism** has deepened the climate challenge. It is necessary to move from today's **'take-make-use-dispose' economy to a circular economy**.

- **Climate change and the shape** of the post-covid-19 world.
- **Slowed international economic recovery and vaccine inequities.**

World Economic Forum(WEF)

- It is an **international non-governmental organization** based in **Geneva, Switzerland.**
- It was founded **in 1971** by German engineer and economist **Klaus Schwab.**
- The Forum engages the foremost political, business, cultural and other leaders of society to shape global, regional and industry agendas.
- It strives in all its efforts to **demonstrate entrepreneurship** in the global public interest while **upholding the highest standards of governance.**

Reports and Indices

- **Global Risks Report 2022**
- It points to **climate action failure, extreme weather events, and biodiversity loss and ecosystem collapse** as the top three global risks.

Key issues of this year

- **Chief Economists Outlook**
- **Global Gender Gap Report 2021**

Main Objectives of 2022 Agenda

- Accelerating the mission to **net zero emissions**, on the **economic opportunity of nature-positive solutions**, and on **cyber resilience**.

- Bridging the **vaccine gap**, strengthening the **resilience of global value chains** besides **building economies in fragile markets** through humanitarian investing.
- To use **data solutions to prepare for the next pandemic**.

LONDON RETURNS 10TH CENTURY 'YOGINI' SCULPTURE TO INDIA THAT WENT MISSING FROM UP IN 1980

Recently, the UK returned the sculpture of a 10th century goat headed Yogini ideal to India.

- It was **illegally removed from a temple in Lakhari, Banda, Uttar Pradesh** in sometimes the 1980s and traded in the markets of London (UK).

Goat Head Yogini:

- **Yoginis are powerful female divinities** associated with the Tantrik mode of worship.
- Often, they are believed to have **64 appearances or Group of 64 Yoginis**, having infinite powers.
- **The Goat Head Yogini is one of the 64 Yoginis.**

INDIA-ISRAEL TO WIDEN SCOPE OF INDUSTRIAL R&D & TECHNOLOGICAL INNOVATION FUND

Recently, experts from India and Israel deliberated on widening the scope of India-Israel Industrial R&D and Technological Innovation Fund (I4F) on the 8th Governing Body meeting.

The projects were

- **Centrally monitored IoT Nano sensors** for molecular diagnostics in healthcare and screening applications.
- **No More Mos-** a mosquito control biological solution.
- **IoT enabled satellite communication** for real-time collection of agriculture and environment data across India.

About (I4F):

- I4F fund is a cooperation between the **Department of Science and Technology (DST)**, India and the **Israel Innovation Authority**, Israel.
- **Aim:** To promote, facilitate and support joint industrial R&D projects between companies from India and Israel to address the challenges in the agreed focus sectors.
- **Implementation (in India):** Global Innovation & Technology Alliance (GITA).

INDIA LAUNCHES SLEW OF INFRA & DEVELOPMENT PROJECTS IN MAURITIUS

Recently, India launched a sequence of projects in Mauritius after Chinese Foreign Minister's visit to the Indian Ocean Region.

India-assisted projects in Mauritius:

- India initiated two projects:
 - A **Civil Service College** will help in skilling government officers, for Mauritius' continued progress.
 - **8 MW Solar PV Farm**, which will help mitigate the climate challenges that Mauritius faces as an island country.
- Two memoranda of understanding (MoUs) were also exchanged:
 - Indian **grant assistance** for the implementation of **small development projects**.
 - **Extension** of USD 190 million Line of Credit for **infrastructure projects**.

India-Mauritius Bilateral Relations

Political Relations

- Diplomatic relations between India and Mauritius were established in **1948**.
- Mauritius is a key part of India's "**Neighbourhood First**" policy.
- **Vaccine Maitri programme**: Mauritius was one of the first countries to receive Indian vaccines and supplies.

Commercial Relations

- India is one of the **largest trading partners** and **exporter of goods and services** to Mauritius.
- **India's exports** to Mauritius comprises largely of **petroleum products**.

- **Mauritius exports to India** includes Vanilla, Instruments and apparatus for medical/surgical sciences, Needles, Aluminum alloys etc.

Economic Cooperation

- The **comprehensive economic cooperation and partnership agreement (CECPA)** signed with Mauritius was India's first free trade agreement with any African country.
 - **Aim**: to make the island nation a hub for Indian investments in the region.
- Mauritius was the single largest source of FDI into India during the financial year 2017-18.

Cultural Relations

- The **Indira Gandhi Centre for Indian Culture (IGCIC)** is one of the largest centres of Indian Council for Cultural Relations.
- The **Mahatma Gandhi Institute (MGI)** was founded for the promotion of Indian culture and education.

Defence and Security Operations:

- India and Mauritius signed pacts of leasing a **Dornier aircraft** and a **Dhruv advanced light helicopter**.
 - It is intended for monitoring the exclusive economic zone of Mauritius.

Maritime security:

- Mauritius and India relation is integral with respect to the **shared waters of the Indian Ocean region**.

- It shares **maritime cooperation vision of SAGAR** -Security and Growth for All in the Region.

- India also **deployed equipment and experts** to contain the Wakashio oil spill.

IFSCA INKS DEAL WITH INSURANCE INSTITUTE OF INDIA FOR CAPACITY BUILDING

Recently, the International Financial Services Centers Authority (IFSCA) entered into a Memorandum of Understanding (MOU) with the Insurance Institute of India (III).

Objective:

- **Capacity building of professionals** in the insurance sector in International Financial Services Centres (IFSCs)

Insurance Institute of India:

- The **Insurance Institute of India** was established in 1955.
- It is under the ownership of Ministry of Finance.

- It was created for the purpose of regulation and licensing of **insurance underwriting profession** in India.
- It is sole national apex body for insurance underwriters in India.

Objectives:

- To run college and conduct examinations in **insurance theory and practice**.
- To **offer scholarships** and prizes for research work bearing on insurance.
- **To ascertain the law** and practice relating to all matters connected with insurance.
- To become a hub of insurance, **health and risk management education** in Afro-Asian Countries.

DCI AND ABU DHABI'S NMDC INK MOU

Dredging Corporation of India Ltd (DCI) and Abu Dhabi's National Marine Dredging Company (NMDC) have a memorandum for projects in the Indian subcontinent, Africa and Middle East.

Dredging:

- It is the **removal of sediments and debris** from the **bottom of lakes, rivers, harbours**, and other water bodies.
- It can involve **excavation** of man-made debris such as **rocks, bottom sediments, construction debris, and refuse, and plant or animal matter** on the bottom of either shallow seawater or freshwaters.

Importance:

- **Maintenance dredging** is of huge importance in coastal regions which have **large tidal activity** and in water bodies that are susceptible to become silted with sediments, sand and mud.
- The Lowlands of Netherlands and Flanders are the best example of such regions which require regular maintenance dredging.
- It helps in **safer voyages** by pacifying underwater traffic and by maintaining proper bottom clearance
- Dredging is also important to make the **marine ecosystem pollution-free**.

- It helps in the **eco-friendly disposal** of deposited polluting **toxicants and harmful materials**.
- It is a primary requirement to **channelize the construction** of a network of **bridges, dams** or other civil engineering works in water.

Negative Impact:

- Dredging of streams **lowers the surrounding water table** and dries up adjacent wetland.
- Dredging impacts marine organisms negatively through entrainment, **habitat degradation**, noise, **remobilization of contaminants**, sedimentation, and increases in suspended sediment concentrations.

Dredging Corporation of India (DCI)

- It is Indian Government **Mini ratna** undertaking, **established in 1976**.
- It reports to the **Ministry of Shipping** and is **headquartered at Visakhapatnam**.

Functions:

- It is involved in **maintenance dredging, capital dredging, beach nourishment**, land reclamation, shallow water dredging, Project Management consultancy and Marine construction.
- It also **occasionally dredges at foreign seaports** in countries such as Sri Lanka, Taiwan and Dubai.

INDIA RANKS 85 IN TRANSPARENCY INTERNATIONAL'S CORRUPTION INDEX

Recently, Transparency international released Corruption Perception Index

Highlights:

- India secured a **CPI score of 40** and ranked it **85th** among 180 countries.
- In **2020, India ranked 86th** with the same CPI score of 40.
- **Denmark, Finland, New Zealand** and Norway topped the list with the highest score.

Corruption Perception Index:

- The index Is released by **Transparency International**.
- It relies on **13 independent data sources**.

- The index **ranks 180 countries** and territories by their perceived levels of public sector corruption.
- It uses a scale of **0 to 100** to rank Corruption Perception Index (CPI), where **0 is highly corrupt and 100 is very clean**.

Kind of corruption does the CPI measure?

- CPI specifically cover the following manifestations of public sector corruption:
 - **Bribery**
 - Diversion of public funds
 - Officials using their public office for private gain without facing consequences
 - **Ability of governments to contain corruption** in the public sector

- Excessive **red tape** in the public sector which may increase opportunities for corruption
- **Nepotistic appointments** in the civil service
- Legal protection for people who report cases of bribery and corruption
- State capture by narrow vested interests
- Access to information on public affairs/government activities

- **The CPI does NOT cover:**
 - Citizens' direct perceptions or experience of corruption
 - **Tax fraud**
 - Illicit financial flows
 - Enablers of corruption (lawyers, accountants, financial advisors etc)
 - **Money-laundering**
 - Private sector corruption
 - Informal economies and markets

“THE AMERICA COMPETES ACT”, AND HOW IT COULD INCREASE OPPORTUNITIES FOR INDIANS IN THE US

Recently, the United States House of Representatives unveiled the ambitious America Creating Opportunities for Manufacturing, Pre-Eminence in Technology, and Economic Strength Act of 2022 or the America COMPETES Act of 2022.

Competition Act 2022 about?

- It proposes to **open up new vistas for talented individuals** from across the world with a new start-up visa.
- It helps in **strengthening supply chains** and **restructuring the innovation machinery** of the country's economy to surpass China and the rest of the world.
- It seeks to **boost semiconductor production** by providing subsidies and loans to **improve supply chain regression** and productivity.
- It also includes funding to **address social and economic inequality, climate change** and **migration**.

Provisions of the Act

- It **amends** the Immigration and Citizenship Act to create a new classification of non-immigrants as "W "s for entrepreneurs

interested in ownership of a start-up company.

- It **allows** foreign nationals who are entitled to that start-up company to become immigrant entrepreneurs, legal permanent residents, and become permanent residents.
- It **exempts** certain foreigners who hold doctoral degrees in science, technology, engineering or mathematics (STEM) from immigration visas.

Objectives of the bill:

- To **transform investments** in the U.S. industrial base and research and development.
- To **expand the opportunities** for middle-class families.
- To help **bring manufacturing jobs back** to the United States.
- To focus on **easing supply chain disruptions** such as semiconductors.

What does it mean for Indians?

- It brings **more opportunities for Indian skilled workers** in the United States.

- Earlier Indians and Indian companies were underrepresented in the H-1B work permits.

FRANCE AND INDIA LAUNCH SWACHHATA START-UP CHALLENGE TO REWARD INNOVATIVE WASTE MANAGEMENT SOLUTIONS

Recently, Ministry of Housing and Urban Affairs (MoHUA) launched the Swachhata Start-Up Challenge.

Swachhata Start-Up Challenge:

- The initiative is launched by MoHUA, in partnership with Department of Promotion of Industry and Internal Trade (DPIIT) and Agence Française de Développement (AFD)

Objective:

- To **provide an impetus to innovative start-ups** to come forward and drive catalytic transformation in the sanitation and waste management sector.

To **capitalise on the start-up movement** by providing opportunities for entrepreneurship to young innovators to create socially impactful and market ready business solutions.

GLOBAL EDUCATION MONITORING REPORT 2020: UNESCO

Recently, the United Nations Educational, Scientific and Cultural Organization (UNESCO) launched the Global Education Monitoring Report (GEMR) in Paris.

- It was launched on the occasion of the **International Day of Education i.e. 24 January**.
- GEMR tries to track the **Sustainable Development Goal-4 (SDG) of 'Quality Education'** for all by 2030.

Highlights of the report:

- India expects all children in primary and lower-secondary levels to be educated by 2030.
- India expects to **increase enrolment in the upper secondary level to 88% from 55.8% in 2015**.

- Based on 2015 data:
 - Nepal is ahead of India in upper secondary education.
 - India has 12.3% of secondary levels of mathematics proficiency in 2015.
 - It is lower than Bangladesh (31%), Nepal (53.8%), Pakistan (68%) and Sri Lanka (50.6%).
 - **Indian numbers are expected to grow over six times to 75% by 2030.**

Education in India:

- **UN recommends at least 4-6% of Gross Domestic Product (GDP) or at least 15-20% of public expenditure** on education by 2030.
- India expects to achieve **6% of GDP allocation to education, which is in line with New Education Policy 2020.**

- **National SDG report, 2021** released by NITI Aayog, says that:
 - **Around 71.9%** of students in Class 8 have achieved at least a **minimum proficiency level in language and mathematics**, in terms of nationally defined learning outcomes.
 - **GMR expects** these numbers to grow to **90% (minimum proficiency level in language) and 85% (minimum proficiency level in mathematics) in 2025.**

Recommendations of GMR report:

- **Nurturing innovation in the public education system** for the common good.
- There is need for the **government-led inclusive approach** for improving the education system.
 - For **quality education** and **equitable opportunities** to learners.
 - For **education policy-making and implementation**
 - To **monitor and safeguard** against lobbying by investors in the education field.
 - For increased finance mobilization in education
 - GMR calls on all actors, state and non-state alike, to play **#RightbytheRules** in the field of education.

PM SUMMIT WITH 5 CENTRAL ASIAN HEADS CALLS FOR JOINT GROUP ON AFGHANISTAN, STRONGER TIES

Recently, Prime Minister hosted the first India-Central Asia Summit in virtual format, two days after China held a virtual summit with Central Asian countries.

Highlights of the summit

3 goals of the summit

- The **mutual cooperation** between India and central Asia was necessary for regional security and prosperity.
- **Establishment of a platform** for regular interaction among all stakeholders.
- Prepare an **ambitious roadmap** for the cooperation between India and Central Asian countries.
- The leaders agreed to institutionalize the Summit mechanism by **deciding to hold it every 2 years.**

Significance of the summit for India

The summit discussed far-reaching proposals to further cooperation in areas of **trade and connectivity, development cooperation, defence and security.** These included:

- **Joint Working Groups at senior official level on Afghanistan:** The leaders discussed concerns over Afghanistan such as regarding:
 - need for immediate humanitarian assistance
 - ensuring the formation of a truly representative and inclusive government
 - combating terrorism and drug trafficking
 - preserving the rights of women children and minorities
- **The use of Chabahar Port**
 - It discussed the possibilities of increasing Indian trade with the region using Iranian ports including the **Chabahar port** terminal managed by Indian and the International North South Transport Corridor (INSTC).
- **Round-Table on Energy and Connectivity:**

- It stressed on the importance of **TAPI gas pipeline** project that runs from Turkmenistan's oil fields through Afghanistan and Pakistan to India.
- The Tapi Project has issues relating India-Pakistan tensions and the situation in Afghanistan.
- **Showcasing of Buddhist exhibitions in Central Asian countries**
- **Commissioning of an India-Central Asia dictionary** of common words
- **Joint counter-terrorism exercises**
- **Visit of 100-member youth delegation** annually from Central Asian countries to India and special courses for Central Asian diplomats.

India's relation with various countries

- **Afghanistan:** India conveyed the continuance of humanitarian assistance to the Afghan people.

- **Kazakhstan:** Kazakhstan has become a vital partner for India's energy security.
- **Uzbekistan:** India stressed the growing cooperation between Indian states and Uzbekistan.
- **Kyrgyzstan:** India shares an active partnership with Kyrgyzstan in the field of education and high-altitude research.
- **Tajikistan:** India has a longstanding cooperation in the field of security with Tajikistan.
- **Turkmenistan** is an important part of Indian vision in the field of regional connectivity, which is evident from participation in the Ashgabat Agreement.
- Ashgabat Agreement envisages facilitation of **transit and transportation** of goods between Central Asia and the Persian Gulf.

FED MOVE AND INDIAN MARKETS

Recently, the US Federal Reserve has signalled a possible hike in interest rates soon, leading to a nervous reaction in Indian markets.

Impact of increase in rates in USA on India:

Outflow of Foreign Capital:

- When **interest rates rise in the US**, the **gap** between those and rates in countries such as India **reduces**, giving **less incentive for foreign investors** to pump money into overseas markets.
- This results in **foreign capital outflows** from equity and from debt.

Impact on Rupee:

- Foreign Portfolio Investors pulling money out of the equity and bond markets could **weaken the rupee** even as the dollar gets stronger with the rate hikes.
- The adverse effect on Indian Rupee in turn, will **hurt India's forex reserves** and imports.

Highest Cost of Fund Mobilization from Overseas Markets:

- The rise in rates also means a higher cost of funds, and fund mobilization in overseas markets will be costly.
- The **increase in the cost of funds** will **increase the cost of capital expenditure** for India Inc, increase the cost of developing infrastructure for the

government and strain the profit margins of companies.

Import-Export:

- India's exports on the other hand, notably **IT and IT-enabled services**,

INDIA, OMAN TIES AND WHY ITS TOP DEFENCE OFFICIAL'S DELHI VISIT IMPORTANT

Oman's top defence official will be in Delhi to co-chair the Joint Military Cooperation Committee (JMMC) with Defence Secretary of India.

India Oman Relations:

Political:

- The Sultanate of Oman is a **strategic partner** of India in the Gulf and an important interlocutor at the **Gulf Cooperation Council (GCC)**, Arab League and Indian Ocean Rim Association (IORA) fora.
- Oman, for many years, was ruled by Sultan Qaboos bin Said al Said, who was a friend of India.
- Sultan Qaboos, the **longest-reigning leader of the modern Arab world**, died in January 2020.

Defence:

- Oman is India's **closest defence partner** in the **Gulf region** and an important anchor for India's defence and strategic interests.
- Defence exchanges are guided by a Framework Memorandum of Understanding, which was recently renewed in 2021.
- Oman is the **only country in the Gulf region** with which **all three services** of the

will **benefit** to some extent **from a stronger dollar** with respect to the rupee.

- **Companies with large import bills may suffer**, however, the same benefit may not fully accrue to exporters due to strong competition in the export market.

Indian armed forces **conduct regular bilateral exercises** and staff talks.

- **Army exercise:** Al Najah
- **Air Force exercise:** Eastern Bridge
- **Naval Exercise:** Naseem Al Bahr
- Oman also provides critical operational support to Indian naval deployments in the Arabian sea for anti-piracy missions.

Economy:

- India is among Oman's top trading partners.
- For Oman, **India was the 3rd largest** (after UAE and China) **source for its imports** and 3rd largest market (after UAE and Saudi Arabia) for its non-oil exports in 2019.
- Major items of **India's exports to Oman** include mineral fuels, **mineral oils** and products of their distillation; **boilers, machinery and mechanical appliances**; articles of iron or steel; electrical machinery and equipment, textiles and garments, chemicals, tea, coffee, spices etc.
- Main items of **India's imports from Oman** include fertilizers; mineral fuels, mineral oils and products of their distillation; **bituminous substances** etc.
- **Indian firms have invested heavily Oman** in various sectors like iron and steel, cement, fertilizers, textile, cables, chemicals, automotive, etc.
- Under the Indian Technical & Economic Cooperation (ITEC) Programme, Omani

Officials have been availing training in many premier institutes of India.

Community

- There are about 6.2 lakh Indians in Oman, of which about 4.8 lakh are workers and professionals.
- There are Indian families living in Oman for **more than 150-200 years**.

Significance of the Duqm port:

- The **Port of Duqm** is situated on the **southeastern seaboard of Oman**,

overlooking the Arabian Sea and the Indian Ocean.

- It is **strategically located**, in close **proximity to the Chabahar port in Iran**.
- Duqm fits into **India's proactive maritime security roadmap**.
 - A Shishumar-class submarine entered Duqm along with naval ship INS Mumbai and two P-8I long-range maritime patrol aircraft.
 - **India gets access to strategic Oman port for military use, reconnaissance aircraft**.
 - The **naval units** can be deployed there with the aim of enhancing surveillance and cooperation.

INDIA WILLING TO TALK TO PAKISTAN ON PILGRIM FLIGHTS

Indian external affairs ministry indicated that India is willing to engage in talks with Pakistan on upgrading the Protocol on Visits to Religious Shrines, 1974.

Genesis:

- As a bilateral agreement, **in 1974, a Protocol on Visits to Religious Shrines was signed between India and Pakistan**.
- It is aimed at **facilitating Indian and Pakistani nationals to visit certain religious shrines in both countries**.
- Currently, this protocol **includes five Muslim shrines on the Indian side and 15**

shrines on the Pakistani side, a majority of the gurdwaras. **5 Muslim shrines on the Indian side are**

- Ajmer Sharif Dargah, dedicated to sufi saint Moinuddin Chishti in Ajmer, Rajasthan
- Nizamuddin Dargah, dedicated to sufi saint Nizamuddin Auliya, in Delhi
- Amir Khusro, dedicated to Sufi musician Amir Khusro in Delhi
- Sirhind Sharif, Mujaddid Alf Sani in Sirhind, Punjab, India
- Kalyar Sharif, dedicated to sufi saint Alauddin Ali Ahmed Sabir, near Haridwar



MEDIA FEDERATION SAYS 45 REPORTERS, STAFFERS DIED WHILE ON DUTY IN 2021

Recently, the **International Federation of Journalists** stated that media staff is most often killed for exposing corruption, crime, and abuse of power in their communities, cities, and countries.

Highlights of the report:

- 2,721 **journalists** have been killed around the **world since 1991**.
- A total of 45 reporters and media workers were killed doing their jobs over the last year.
- The Asia Pacific region tops the regional list with 20 killings, followed by American (10), Africa (8), Europe (6) and Middle East and Arab (1) Killings

UN Plan of Action on the Safety of Journalists and the Issue of Impunity

- It is a set of objectives & actions developed by UNESCO's member states and endorsed

by the UN Chief Executives Board in **April 2012**.

- **Objective:** to directly address the problem of journalists' safety and the problem of impunity.

Aim:

- To create a **free and safe environment** for journalists and media workers, both in conflict and non-conflict situations,
- To strengthen peace, democracy, and development worldwide.
- To conduct awareness-raising campaigns on a wide range of issues such as existing international instruments and conventions.
- To overcome the growing dangers posed by emerging threats to media professionals, including **non-state actors**, as well as various existing practical guides on the **safety of journalists**.

EGYPT'S SUEZ CANAL RECORD HIGHEST ANNUAL REVENUE EVER IN 2021

Recently, it was reported that the Suez Canal saw high cargo movement in 2021.

Suez Canal:

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- It is a **manmade canal of Egypt, which connects the Mediterranean Sea to the Red Sea** through the Isthmus of Suez.
- The **red sea** separates the Asian continent from the African continent
- **Length: around 195 km.** (22 meters of width and around 8-meter depth).
- Due to its small size, it has seen many blocks, impacting world trade.

- It accounts for roughly **10% of global maritime trade.** –
- It is a source of much-needed foreign currency for Egypt.

It provides the **shortest maritime route** between Europe and the lands lying around the Indian and western Pacific oceans.

CHINA INTIMIDATED BY SUPPORT FOR TIBET, SAYS 'TIBETAN PARLIAMENT-IN-EXILE'

Tibetan Parliament-in-Exile commented that China is “intimidated” by the increasing support for the independence of Tibet.

Background and timeline:

Tibetan Government-in-Exile:

- Central Tibetan Administration (CTA) is also known as the Tibetan Government-in-Exile.
- CTA is the executive arm, led by Dalai Lama.
- CTA functions on the basis of the Constitution of the Tibetan government called '**The Charter of the Tibetans in Exile**'.
- Currently, Tibetan Government-in-Exile also has foreign missions in many countries, including India.

Genesis

- In-exile literally means, local people, forced to live outside their native area.
- Due to the brutalities of China, **in 1959, the Dalai Lama** (who is the head of the Tibetans) **came to India** with his followers.

- Later with the support of the government of India, they **established their own government system on Indian soil (at Dharamshala), called Tibetan Parliament-in-Exile.**
- It covers people who came to India with the Dalai Lama and people living in Tibet but supporting Dalai lama.
- Later the **Charter of the Tibetans in Exile** was adopted by the Tibetan Parliament-in-Exile in 1991. It provided for **Central Tibetan Administration (CTA) and a Judiciary.**

The Dalai Lamas

- He is the political and cultural head of the **Tibetans.**
- They are believed to be **manifestations of Avalokiteshvara or Chenrezig.**
- They are considered as the bodhisattva of **Compassion and patron saint of Tibet.**
- Since 1959, he has been living in **Dharamsala** (Uttarakhand).
- Dharamshala also serves as the seat of the Tibetan political administration in exile.

DALAI LAMA'S LAST ESCORT ON 1959 ESCAPE FROM TIBET DIES

Naren Chandra Das the last surviving member of a small troop of Indian soldiers who escorted the Dalai Lama as he fled from Tibet in 1959 has died.

Dalai Lama

- It is a **title** given by the **Tibetan people** to the **foremost spiritual leader of the Gelug or "Yellow Hat"** school of Tibetan Buddhism.
- It is the **newest and most dominant** of the four major schools of Tibetan Buddhism.
- The Dalai Lama is **also known in Tibetan as the Rgyal-ba Rin-po-che**. ("Precious Conqueror").
- The 14th and **current Dalai Lama is Tenzin Gyatso**, who lives as a refugee in India.
- The Dalai Lama is also **considered to be the successor in a line of tulkus** who are believed to be **incarnations of Avalokitesvara**, the Bodhisattva of Compassion.
- The Dalai Lama was an important figure of the **Geluk tradition**, which was **politically and numerically dominant in Central Tibet**, but his **religious authority went beyond sectarian boundaries**.

Process to choose Dalai Lama

- When a Dalai Lama dies – or even before their death – a **successor is found rather than chosen**.
- Traditionally, **senior Tibetan monks conduct an elaborate quest** to find a child who is the Dalai Lama's next incarnation.

- The search involves consulting **oracles, interpreting visions and reading spiritual signs**.
- The senior monks **may find clues from the deceased body of the Dalai Lama**, such as the direction it faces or its posture.
- If the body is cremated, the **direction of the smoke is monitored** as a potential indicator for the direction of rebirth.

Impact of Dalai lama issue between China and Tibet on India

- Besides border disputes, India and China have **had major differences** over the Dalai Lama.
- After the Chinese forces forcefully occupied Tibet in 1950, the Tibetan Buddhist leader - the **Dalai Lama - fled to India in 1959** along with tens of thousands of his disciples.
- **China** has made it clear it intends to **announce its own Dalai Lama**, as it once did the Panchen Lama, and try to control the succession.
- While Dalai Lama said that his successor could be a living incarnation, in India or even in another country like Taiwan.
- India's harbouring of the Dalai Lama and more than 150,000 Tibetan refugees has always **evoked an angry response from China**.
- **China objected to Dalai Lama's visit to Tawang** which lies in Arunachal Pradesh in an area close to China border.

WORLD POWERS VOW TO STOP SPREAD OF NUCLEAR WEAPONS

Recently, China, Russia, U.S., U.K., France pledged to prevent atomic weapons spreading and to avoid nuclear conflict ahead of a review of a key nuclear treaty NPT.

Treaty on the Non-Proliferation of nuclear weapons (NPT)

- **Aim:** To prevent the spread of nuclear weapons and weapons technology.
- Opened for signature in 1968, the Treaty entered into force in **1970**.
- A total of **191 States** have joined the Treaty.
- **India, Israel, and Pakistan** have not accepted the NPT.

Objective

- Undertaking to co-operate in facilitating the application of **International Atomic Energy Agency** safeguards on peaceful nuclear activities.
- Believing that the **proliferation** of nuclear weapons would seriously enhance the danger of nuclear war.
- Desiring to further the easing of **international tension** and the strengthening of trust between States in order to facilitate the cessation of the manufacture of nuclear weapons.
- Declaring their intention to achieve at the earliest possible date the **cessation** of the nuclear arms race and to undertake effective measures in the direction of nuclear disarmament.

Consequences of use of nuclear weapons

Health

- The nuclear **shock wave** can directly injure humans by rupturing eardrums or lungs or by hurling people at high speed.

Thermal Radiation

- Unlike conventional explosions, a single nuclear explosion can generate an intense pulse of **thermal radiation** that can start fires and burn skin over large areas.
- Nuclear detonations release large amounts of **neutron** and **gamma** radiation.

Environment

- **Detonation** of a nuclear weapon in a forested area virtually guarantees fire damage at ranges greater than the range of air-blast damage.

Diseases

- Certain cancers such as **thyroid cancer** in children is particularly associated with exposure to radiation.
- The children of those exposed to radiation are statistically more likely to be born with abnormalities and suffer from **leukaemia**.

STATE OF EMERGENCY IN KAZAKHSTAN AS PRESIDENT VOWS CRACKDOWN

Recently, Kazakhstan government has imposed nationwide state of emergency to curb unrest against

the sharp increase in price of liquefied petroleum gas (LPG).

Emergency Provisions in India:

- Emergency Provisions are contained in **Part Eighteen of the Constitution of India.**

National Emergency (Article 352):

- The Constitution of India has provided for imposition of emergency caused by **war, external aggression or internal rebellion.**
- This is described as the National Emergency.
- This type of emergency can be **declared by the President of India.**
- According to the **44th Amendment of the Constitution**, the President can declare such an emergency **only if the Cabinet recommends in writing** to do so.
- The President can issue such a proclamation even on the **ground of threat of war or aggression.**

Proclamation of National Emergency:

- The proclamation has to be **approved by both the Houses** of Parliament by **absolute majority** of the total membership of the Houses as well as **2/3 majority of members present and voting.**
- In case the Lok Sabha stands dissolved at the time of proclamation of emergency or is not in session, it has to be approved by the Rajya Sabha within one month and later on by the Lok Sabha also within one month of the start of its next session.
- Once approved by the Parliament, the emergency **remains in force for a period of six months** from the date of proclamation.
- In case it is to be **extended beyond six months**, another prior resolution has to be passed by the Parliament.

- In this way, such emergency **continues indefinitely.**

Revocation of National Emergency:

- The emergency can be **revoked by a simple majority** in the **Lok Sabha.**
- In such a case emergency will immediately become inoperative.

State Emergency or President's Rule (Article 356):

- Under **Article 356**, the President may issue a proclamation to impose emergency in a state.
- The grounds on which the president can impose state emergency are:
 - If he is **satisfied on receipt of a report from the Governor of the State**, or otherwise
 - A **situation has arisen** under which the **Government of the State cannot be carried** on smoothly.

Proclamation of State Emergency:

- It must also be **placed before both the Houses of Parliament** for approval.
- The **approval** must be given **within two months**, otherwise the proclamation ceases to operate.
- If approved by the Parliament, the proclamation **remains valid for six months** at a time.
- It can be **extended for another six months** but **not beyond one year.**
- However, emergency in a state can be extended beyond one year if:
 - A National Emergency is already in operation
 - The Election Commission certifies that the election to the State Assembly cannot be held.

Financial Emergency (Article 360):

- The President may declare a state of Financial Emergency if he/she is satisfied that the **financial stability or credit of India** or any of its parts is in danger.
- It has also to be **approved by the Parliament.**

- It must be **approved by both Houses of Parliament within two months.**
- Financial Emergency **can operate as long** as the situation demands and may be revoked by a subsequent proclamation.
- Till date, **Financial Emergency has not been declared in India.**

GLOBAL FOOD PRICES HIT 10-YEAR HIGH IN 2021: UN AGENCY

According to the UN's Food and Agricultural Organization Global food prices reached a 10-year high in 2021, rising by an average of 28 per cent compared to the previous year.

FAO Food Price Index (FFPI)

- **Launch by:** Food and Agriculture Organization of the United Nations in 1996.
- It is a **global indicator** of the state of global food markets.

- It measures **international price movements** of a basket of food commodities over time, in nominal and real terms.
- **Current Base period:** 2014-2016

Commodity coverage

- Encompasses **24 basic food commodities** that are globally traded.
- These commodities are grouped into **five major groups** (cereals, dairy products, vegetable oils, sugar and meat), for which a respective price index is calculated.

SEA DRAGON 2022 EXERCISE COMMENCES WITH SIX INDO-PACIFIC NATIONS

The US Navy announced the multinational exercise of Sea Dragon 22 with six Indo-Pacific nations.

- Sea Dragon is a **US led multinational exercise.**
- **Other five** participating nations are **Australia, Canada, India, Japan and South Korea.**
- **Aim:** To **practice and discuss anti-submarine warfare tactics** to operate

against traditional and non-traditional maritime security challenges in the Indo-pacific region.

- Sea Dragon 22 focuses on **anti-submarine warfare (ASW) training and excellence**, which includes everything from **tracking simulated targets to tracking a genuine US Navy submarine.**

REGIONAL COMPREHENSIVE ECONOMIC PARTNERSHIP AGREEMENT ENTERS INTO FORCE

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Recently, the Regional Comprehensive Economic Partnership (RCEP) deal came into effect from 1 January 2022.

Regional Comprehensive Economic Partnership (RCEP):

- RCEP is a multilateral **Free Trade Agreement (FTA)**.
- **RCEP was signed in the year 2020**, between 15 countries (10 ASEAN members and its 5 **dialogue** partner nations).
- It includes 10 member states of the **Association of Southeast Asian Nations (ASEAN)**, namely; **Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam**.
- Five **dialogue partners** of ASEAN namely **Australia, China, Japan, New Zealand, South Korea**.
- Though **India is also a dialog partners of ASEAN, it is not part of RCEP**.
- India did not join RCEP.
- The RCEP FTA will **eliminate tariffs on 91% of goods** as well as introduce rules on **investment and Intellectual Property (IP)** to promote free trade.

Importance of RCEP

- RCEP nations accounts for **30% of global GDP, 30% of global trade, 25% of Foreign Direct Investment (FDI) flows and 30% of the total population**.
- It is the **largest FTA of the world**. Importantly, **USA, the largest economy in the world, is not part of RCEP**, this is a big achievement.
- RCEP will **help in ease of trade** among **Southeast Asian and Asia-Pacific nations**.

India not joined RCEP:

- Covid-19 pandemic hit Indian economy very badly. **India's domestic industry was not ready to face the global competition**.
- MSME contribute about 30% of Indian GDP. Farming sector led Indian economy during Covid crisis. India wanted **to protect farmers and small entrepreneurs from competition** by other RCEP countries.
- India already has bilateral FTAs with all of the RCEP nations.
 - 11 out of 15 FTAs has resulted in vast trade deficit for India.
 - There were chances that **RCEP will further open up Indian market to nations which India has a big trade deficit**.
- **China**, a hostile neighbour of India, has used Indian market to dump his products.
 - This **dumping has distorted domestic trade** of India. Also, **the balance of trade is not in favor of India**.
- The **Intellectual Property Rights (IPR) issues have hampered Indian service economy**.
 - Recent IPR issue on COVID drug again trigged this issue. RCEP do not provide solution for Indian IPR concerns.

India's current position on RCEP:

- Currently, if India will join RCEP some of Indian industry like pharmaceuticals, cotton yarn and the services industry could get a limited benefit. **India is open for further negotiations** as per Indian needs, to become part of RCEP.

Free Trade Agreement (FTA):

- FTA is a trade agreement between participating members, to reduce tariff and non-tariff barriers in phased manner, ultimately making it zero.
- This approach will make the market free from barriers, creating free trade.

KAZAKHSTAN PROTESTS: MOSCOW-LED ALLIANCE SENDS 'PEACEKEEPING FORCES'

Recently, **Collective Security Treaty Organization** approved a **peacekeeping force** to **Kazakhstan** in a bid to quell the nationwide protest.

- The protest was due to rise in fuel prices along with wider discontent with the government over corruption, living standards, poverty and unemployment.

Collective Security Treaty Organization (CSTO):

- CSTO, launched in 2000, is an intergovernmental military alliance in Eurasia that consists of select post-Soviet states.
- The member states are **Russia, Belarus, Armenia, Kazakhstan, Kyrgyzstan, and Tajikistan.**
- **Afghanistan and Serbia** hold observer status in the CSTO.
- **Headquarters:** Moscow, Russia

Objective:

- Strengthening of peace among member states.
- International and regional security and sustainability
- Protection of independence on a collective basis
- Territorial integrity and sovereignty of member states

Functions:

- Repulse **military aggression**
- Conduct **anti-terrorist operations**
- **Fight transnational crime and drug trafficking**
- Neutralize the effects of **natural disasters.**

Structure of the CSTO

- **Collective Security Council (CSC)** is the highest body of the CSTO.
 - It comprises the heads of member states.
 - The Council's Chairman is the head of the country that holds the rotating chairmanship.
- **Council of Ministers of Foreign Affairs** is the executive and advisory body of the CSTO.
 - They coordinate member states' activities in foreign policy.
- **Council of Ministers of Defense** coordinates member states in military policy, capability, and cooperation.
- **Committee of Secretaries coordinates** member states in ensuring national security.
- **Permanent Council** coordinates member states in implementing decisions made by CSTO bodies in periods between CSC sessions.
- **Parliamentary Assembly** is an inter-parliamentary body.
 - It considers issues of cooperation in international, military, political and legal fields, and drafts proposals for the CSC.

JAPAN, AUSTRALIA SIGN DEFENCE PACT FOR CLOSER COOPERATION

Japan and Australia signed a new **Reciprocal Access Agreement** to cooperate closely.

- It is a **defence treaty** between **Australia and Japan**.
- The pact

Aim:

- To allow Japanese and Australian troops to visit each other's countries and conduct training and joint operations.
- To **intensify military cooperation** in the Indo-Pacific Region.
- To establish streamlined arrangements to support the deployment of defence forces more quickly and with less administration.

CHINA'S LUNAR LANDER FINDS FIRST ON-SITE EVIDENCE OF WATER ON MOON'S SURFACE

Recently, China's **Chang'e 5** lunar lander has found **the first-ever on-site evidence of water** on the **surface of the moon**.

Highlights:

- The presence of water had been confirmed by remote observation, but the signs of water in rock and soil is deduced by the lander.
- As per the study published by **peer-reviewed journal Science Advances**, reveals that the lunar soil at the landing site contains less than 120 parts-per-million(ppm) water.
- **Lander** measured **the spectral reflectance of the Regolith** and the **rock** and detected water on the spot for the first time.

Chang'e 5

- Chang'e 5 is the fifth lunar exploration mission of the Chinese Lunar Exploration

Program, and China's first lunar sample-return mission.

- **Manufactured By:** China Academy of Space Technology (CAST)
- **Rocket used for Launching:** Long March 5

Components:

- **Lander:** It landed on the lunar surface after separating from the Orbiter, installed with a drill and a scooping device.
- **Ascender:** After the collection of samples, they are transported back to the orbiter with the help of ascender.
- **Orbiter:** Once the samples are transported to Orbiter, orbiter travels back to the earth orbit and releases the returner or **reentry capsule**.
- **Returner:** It performs a skip **reentry** to bounce off the atmosphere once **before formal reentering**.

AT WTO, CHINA A 'DEVELOPING' COUNTRY: WHY MANY NATIONS ARE RAISING CONCERNS

China's status as a 'developing country' at the World Trade Organization (WTO) has become a contentious issue with many countries raising concerns over the

upper middle-income nation deriving benefits reserved for developing countries under WTO norms.

Who are the developing countries in the WTO?

- Developing countries comprise a **majority** of the WTO membership.
- The WTO **has not defined** 'developed' and 'developing' countries.
- The member **countries are free to announce** whether they are 'developed' or 'developing'.
- However, **other members can challenge** the decision of a member to make use of provisions available to developing countries.
- The developing country status owes its origin to **the U.S. Trade Act of 1974**.
- It authorised the Generalized System of Preferences (GSP) to help poor countries develop faster.

Benefits of 'developing country' tag?

- **Special and differential treatment' (S&DT) provisions:** It includes the following:
 - **Longer time periods** for implementing Agreements and commitments
 - Measures to **increase trading opportunities**
 - Provisions requiring all WTO members to safeguard the trade interests of developing countries
 - preferential treatment for state enterprises

Why are some countries against China being classified as one?

- China is the **second largest economy** in the world.
- It is the **largest** when calculated by **purchasing power parity**.
- The **World Bank** categorizes China as an **"upper-middle-income" country**.
- China is a **major source of foreign direct investment** in all corners of the world and

provides billions of dollars in overseas development assistance.

- 12 of the 100 largest companies in the world by total market capitalization are Chinese.

Least Developed Countries (LDC)

- The WTO recognizes as least-developed countries (LDCs) those countries which have been designated as such by the **United Nations**.
- There are currently **46 least-developed** countries on the UN list.
- The WTO recognises LDCs relying on a classification by the UN based on a **criteria that is reviewed every three years**.

What are the benefits of LDC classification?

- LDCs are often exempted from certain provisions of WTO pacts.
- Have **preferential market access** for goods and services;
- Receive **technical assistance and capacity building**.
- Receive **financial and technical assistance** provided by multilateral partners, such as special programmes and budget allocations at the UN, including the Technology Bank for LDCs
- Receive support to **participate in international forums**, such as caps and discounts on contributions to the budget of the United Nations and financial support for representatives of LDCs to travel to General Assembly.
- Investment Support Programme (ISP) for LDCs provides on-demand legal and professional technical advice to LDCs on investment-related negotiations and dispute settlement.
- ISP for LDCs was jointly designed by the International Law Organization (IDLO) and UN-OHRLS (United Nations Office of the

High Representative for the Least Developed Countries).

EX-RBI GOVERNOR URJIT PATEL APPOINTED AS VICE PRESIDENT OF AIIB

Recently, former Reserve Bank of India (RBI) governor has been appointed vice-president of Asian Infrastructure Investment Bank (AIIB).

Asian Infrastructure Investment Bank (AIIB)

- **Established:** 2016.
- **Headquartered:** Beijing.
- It is an international development bank that provides **financing** for infrastructure projects in Asia.
- **Aim:** To improve social and economic outcomes in its region, Asia, and beyond.
- The bank currently has **104 members**, including 17 prospective members from around the world.
- **China** is the largest shareholder with 26.61% voting shares in the bank. **India** has 7.6% voting shares.

Structure

- The bank is headed by a **Board of Governors** composed of one Governor and

one Alternate Governor appointed by each of the **86 member** countries.

- A **non-resident** Board of Directors is responsible for the direction and management of the Bank.
- The bank staff is headed by a **President** who is elected by AIIB shareholders for a **five-year term** and is eligible for re-election once.

Priorities

- It promotes **sustainable Infrastructure** and to support countries that are striving to meet environmental and development goals.
- The bank funds projects linking countries in the region and **cross-border infrastructure** projects for Roads, rail, ports, energy pipelines and telecoms across Central Asia, South East and South Asia and the Middle East.
- It also includes **private capital mobilization** and encouraging partnerships that stimulate private capital investment.

WOLF VOLCANO IN GALAPAGOS ISLANDS ERUPTS SPEWING LAVA AND CLOUDS OF ASH OVER THE PACIFIC OCEAN

Recently, the wolf volcano in the Galapagos islands erupted.

- Wolf volcano, also known as **Mount Whiton** is the highest volcano of the **Galápagos archipelago**.
- **Location:** It lies on the equator on the northern end of Isabela Island.

WHY DOES TURKMENISTAN PLAN TO CLOSE ITS 'GATEWAY TO HELL'?

Recently, President of Turkmenistan urged to find a way to extinguish fire in the massive five-decade old **Darvaza gas crater**.

Darvaza Gas Crater:

- It is one of the **largest gas reserve** found in the world.
- It is a **natural gas field** located near Darvaza, Turkmenistan.
- The Darvaza gas crater is also known as the '**Gateway to Hell**'.

History:

- The site was identified by **Soviet engineers** in 1971.
- It was originally a substantial oil field site.
- While extracting the gas, the ground beneath the drilling rig collapsed into a wide crater.
- The gas has continued to burn for more than 50 years and is expected to keep on burning.

Effects:

- The man-made crater negatively affects both the **environment** and the **health** of the people living nearby.
- It is affecting valuable **natural resources** which can be used for the well-being of the people.

WORLD'S MOST POWERFUL PASSPORTS FOR 2022

Recently, Henley Passport Index 2022 was launched.

- The current rankings are for first quarter of 2022.

Global Highlights:

- **Most powerful Passports:** Japan and Singapore
- **Least Powerful:** Afghanistan

India related Highlights:

- India's rank: **83rd**
 - India shared the position with **Sao Tome and Principe** in Central Africa.
 - India's rank in 2021: 90th

Travel Access for India:

- India now has **visa-free access** to 60 destinations worldwide with Oman and Armenia being the latest additions.
- It has added 35 more destinations since 2006.

Henley Passport Index (HPI):

- It is a **global ranking of countries** according to the travel freedom for their citizens.
- It started in 2006 as **Henley & Partners Visa Restrictions Index (HVRI)**.
- It provides a ranking of the 199 passports of the world according to the number of countries their holders can travel **visa-free**.
- The index is based on the data derived from the **International Air Transport Association (IATA)**.

International Air Transport Association (IATA):

- IATA is a **trade association** of the world's airlines founded in 1945.
- It **supports airline activity** and helps formulate industry policy and standards.
- **Headquarters:** Montreal, Canada.

IN A FIRST, U.S. SURGEONS TRANSPLANT PIG HEART INTO HUMAN PATIENT

Recently, US surgeons have implanted a heart from a genetically modified pig to a human patient.

- Xenotransplantation involves the **transplantation of nonhuman tissues or organs into human recipients**.
- It involves the **transplantation, implantation or infusion** of either:

- live cells, tissues, or organs from a **nonhuman animal source**,
- human body fluids, cells, tissues or organs that have had ex vivo contact with live nonhuman animal cells, tissues or organs.
- The development of xenotransplantation is driven by the fact that the **demand for human organs** for clinical transplantation, is exceeding **the supply**.

GLOBAL RISKS REPORT 2022

Recently, Global Risk Report for 2022 was launched by **world Economic Forum**.

Global Risks Perception Survey (GRPS):

- GRPS is the **World Economic Forum's** source of **original risks data**.
- It has 37 risks out of which 2 were added in 2021-22 report.
 - 2 new added risks: i) "Geo-economic confrontations" and ii) "Pollution harms to human health."

Highlights of GRPS 2021-2022:

Global Risks by Severity:

- **Climate-change related risks** account for three of the top risks by severity in the next 10 years with the highest potential to

severely damage societies, economies and the planet.

- The **global risks horizon changes** over the next two to 10 years, as the cascading impacts of the COVID-19 pandemic are felt.
- **Societal risks** make up a third of the global top 10, with societal cohesion erosion and livelihood crises completing the top five.
- **Infectious diseases** come lower down at number six.

Risks Outlook and Global Divergence:

- By 2024, **developing economies** (except China) will have fallen 5.5% below their pre-pandemic expected GDP growth, while **advanced economies** will have surpassed it by 0.9%.
 - Such **global divergence** will impact on the world's ability to tackle common challenges

like **climate change**, digital safety, restoring livelihoods and societal cohesion and managing **competition in space**.

- Widening disparities within and between countries will make it difficult to control **COVID-19 and its variants**.

Short-Term Global Risk:

- **Erosion of social cohesion**, deterioration of mental health, infectious diseases and livelihood crises will be equal to **environmental threats** in the next two years.

Medium Term Risk:

- In the next five years, **economic risks of debt crises** and geoeconomics confrontations emerge as governments struggle to balance **fiscal priorities**.

Long-Term Risk

- **Environmental risks** dominate the world for both the short and long term in the next 10 years.

World Economic Forum (WEF):

- WEF is an **international organization** that brings together its membership of political and business leaders each year to discuss major issues that **impact the global economy**.
- **Founded in:** 1971
- **Headquarters:** Geneva, Switzerland
- The **environment and related issues** like biodiversity destruction and human-made disasters are the most pressing global concerns in WEF's list.
- It has no independent **decision-making power** but seeks to influence powerful people to make decisions that benefit the global community.
- The organization is funded through its **own membership**, which includes prominent business and political figures.

NATO-RUSSIA COUNCIL MEETS IN BRUSSELS

The NATO-Russia Council, which brings together all 30 NATO Allies and Russia, met in Brussels to discuss the situation in Ukraine, and the implications for European security.

Highlights of the talk:

Moscow's demands were rejected

- Russia's **demands** include **not admitting any more members** into NATO and to **withdraw western forces** from its Eastern Allies.
 - But both the demands were rejected by U.S and its allies.

- Russia has been **deploying security forces** around Ukraine, creating **invasion scare** among the allies.

Issue of Ukraine was unresolved

- The US and its allies rejected Russia's demands of easing tensions over Ukraine.
- Russia also **demand that Ukraine should not be added into the NATO**, a request denied by the allies.

Future prospect of the NATO-Russia Council

- NATO allies proposed a number of areas where **dialogue with Russia** could continue.
- It includes increasing the transparency of military exercises, reducing space and cyber threats, and addressing arms control and non-proliferation.

NATO-Russia Council (NRC)

- The NATO-Russia Council (NRC) was established as a mechanism for **consultation, consensus-building, cooperation, joint decision and joint action**.
- It includes fighting terrorism, military cooperation, cooperation on Afghanistan (including transportation by Russia of non-military International Security Assistance Force freight, fighting the local drug production, industrial cooperation, and weapons non-proliferation.
- The NRC was established at the NATO-Russia Summit in Rome on 28 May 2002 by the Declaration on “**NATO-Russia Relations: a New Quality**”.
- The NRC replaced the **Permanent Joint Council (PJC)**, a forum for consultation and cooperation created by the 1997 NATO-Russia Founding Act.
- The Alliance suspended all practical cooperation between NATO and Russia.
- **Reason:** Russia’s illegal military intervention in Ukraine and its violation of

Ukraine’s sovereignty and territorial integrity.

NATO (North Atlantic Treaty Organization)

- It is an **intergovernmental military alliance** between 27 European countries, 2 North American countries, and 1 Eurasian country.
- It was founded in **1949** by the United States, Canada, and several Western European nations to **provide collective security against the Soviet Union**.
- **Headquarters:** Brussels, Belgium
- NATO constitutes a **system of collective security**, whereby its independent member states agree to **mutual defense** in response to an attack by any external party.
- NATO is traditionally focused on **Russia** and **the European neighbourhood**.
- It recognises the need to **deter revisionist and militarily advanced Russia**, and the threat posed by rogue nations such as North Korea.
- The Soviet Union formed its own defence and political alliance with Eastern European nations as a counterbalance to NATO-**The Warsaw Pact**.
- The Warsaw Pact was signed in 1955.
- This alliance was disbanded after the dissolution of the Union of Soviet Socialist Republics (USSR) in 1991.

NEWS ANALYSIS | NOT POSSIBLE TO DEMILITARISE SIACHEN

Recently, experts said that demilitarisation of the Siachen glacier is not possible in current situations.

Siachen battlefield:

- The **Siachen Glacier** is located in the **eastern Karakoram range** in the Himalayas (Ladakh UT).
- It is the **world’s highest battlefield**, i.e., between India and Pakistan.

- It is the **longest glacier (78 km) of the Karakoram Range and second longest glacier in the world's non-polar areas.**
- Siachen is the source of the **Nubra River** that eventually feeds the Indus River.
- **Siachen and Sir Creek** (Gujrat Border with Pakistan) have long been termed "**low hanging fruits**" in the past for resolution between India and Pakistan.

Genesis:

- The **Line of Control (LoC), made in 1971**, had a point called **NJ 9842**. Here, the LoC between India and Pakistan ends. It was proposed that it will remain unoccupied.
- But Pakistan tried to occupy the territory and in retaliation, India was forced to retaliate. A major portion of it is now under Indian control. Since then, **Indo-Pak forces have been face-to-face all along the glacier.**

SOUTH AFRICA'S 'KING KHOISAN' ARRESTED OVER CANNABIS PLANTS AT PRESIDENT'S OFFICE

Recently, King Khoisan, the leader of one of South Africa's oldest inhabitant communities, was arrested for growing cannabis near South African president office in Pretoria.

Who are the Khoisans?

- **Khoisans** are known to be the first people to **inhabit South Africa.**
- It comprised of two different communities who practiced similar cultures and spoke the same languages.
 - The **Khoikhoi** were nomadic farmers and **San** were hunter-gatherers.
- The San were the **oldest population of humans** in South Africa and on Earth.

Genesis:

- Khoisans are known to be the first people to come in contact with **Dutch settlers** in South Africa (17th century).

- As the Dutch began to take over land in the country, Khoisans were enslaved and hence their population diminished over the years.
- The community was **derogated by the European settlers.**

What is the Issue?

- The Khoisans have been protesting near the president's office since 2018 for **recognition of the community** and their language among other things.

Demands put forward by the community:

- Khoisans should be recognised as the country's first nation.
- The community has been demanding **land rights** and to be declared rightful owners of the land.
- They want **Khoekhoe language**, to be declared as another national language of the country.

SIGNS OF 'SIGNIFICANT' TSUNAMI DAMAGE ARE SEEN IN TONGA

Recently, an undersea volcano named **Hunga-Tonga-Hunga-Ha'apai** erupted near Tonga, causing tsunamis to hit Hawaii, Japan, and Tonga's largest island, Tongatapu.

- This volcano has **erupted regularly** over the past few decades.

Location of Tonga

- The kingdom of Tonga is an **archipelago south of Samoa**.
- Tonga is **tiny island nation** comprising of 150 islands, some of them being uninhabited.
- It is located **northeast of New Zealand in the Pacific Ocean**.
- It consists of two small uninhabited islands, Hunga-Ha'apai and Hunga-Tonga.

What is an undersea volcano?

- An **undersea or submarine volcano** is located below the ocean surface and mostly erupts under water.
- Three-quarters of all volcanic activity on Earth actually occurs underwater.
- They are **located near the Earth's tectonic plates**.
- Submarine volcanoes are most common where tectonic plates move towards or away from each other.

- Undersea volcanic activities give rise to **seamounts**.
- Seamounts are underwater mountains that are **formed on the ocean floor** but do not reach the water surface.
- An underwater volcano is usually **believed not to be explosive** since the magma is supposed to be cooled down by the cool water.
- However, when magma is blasted out of the ground full of volcanic gas, it does not provide a layer of insulation to allow the outer surface of the magma to cool.
- There are **two types of sound** generated by submarine eruptions:
 - One created by the **slow release** and bursting of large lava bubbles.
 - The other one is created by **quick explosions** of gas bubbles.

How do volcanic eruption cause tsunamis?

- Violent volcanic eruptions represent **impulsive disturbances**, which can **displace a great volume of water** and generate destructive tsunami waves in the immediate source area.
- According to this mechanism, **waves may be generated** by the sudden displacement of water caused by a volcanic explosion.

ECUADOR EXPANDS GALAPAGOS MARINE RESERVE

Recently, Ecuador expands the protected marine area around Galapagos Islands.

Galapagos Islands:

- Galapagos Islands are a group of Islands located in the **west of mainland Ecuador**.
- They are **distributed on either side of the equator in the Pacific Ocean**.

- The islands are **known for an abundance of endemic species**. These species were studied by Charles Darwin and prosed **Darwin's theory of evolution**.
- The islands are formed at the **meeting point of three tectonic plates—the Nazca, Cocos, and Pacific**.
- These plates are **situated at the crossroads of three major Pacific currents: Cold South Equatorial Current, Warm**

Panama Current and Deep-Sea Cromwell Current.

- It is **under the control of Ecuador**. Due to its biodiversity, it is designated as
- **Galápagos Marine Reserve and Galapagos National Park** by the Ecuador government.
- The UNESCO recognized it as a **World Heritage Site (19780)** and as a biosphere reserve under the **World Network of Biosphere Reserves (WNBR) (1985)**.

Marine Protected Area (MPA):

- Marine or oceanic areas notified by the concerned government, with aim of **protection of flora or fauna** are known as Marine protected areas.
- It may be anything including, wildlife sanctuary, National Park, biosphere, etc. Here human activities are more strictly regulated than the surrounding waters.
- Generally, On the coasts, protected areas that fall **entirely or partially within 500 metres to landward from the High Tide Line** (as described by the **Coastal Regulation Zone notification, 2011**) are considered to be MPAs.

- The **seaward extent of MPAs under the Wildlife Act is limited to** the extent of the Territorial Sea as promulgated by the Maritime Zones Act, 1976 i.e., **12 nautical miles from India's baseline**.
- The **Marine National Park (Gulf of Kutch, Gujrat) is the largest Marine National Park of India**.

Marine Protected Area Agency Partnership (MPAP)

- MPAP is an informal **collaboration of MPA Agencies from around the world** to discuss common issues and explore opportunities for cooperation.
- **IUCN** is a historical partner of the MPAP and contributes to building this network of Agencies.
- **MPAAP's membership:** Argentina, Australia, Canada, Chile, Colombia, Finland, France, Germany, Indonesia, Italy, Malaysia, Mexico, New Zealand, the Philippines, the Republic of Korea, Spain, South Africa, the United Kingdom (U.K.), the United States (USA) and IUCN Global Marine and Polar Programme (observer).

INEQUALITY KILLS: A STUDY OF THE NEW OXFAM REPORT

Recently, a new report entitled 'Inequality Kills' was launched by Oxfam International.

Highlights of the report:

- **Economic inequality** has cut the income of 99% of the global population, and forced over 160 million more people into poverty.
- Hunger kills over 2.1 million people each year at a minimum.
- **Women, ethnic minorities and developing countries** have been the

hardest hit by growing inequality during the COVID-19 pandemic.

- **Gander based violence** was reported by the increasing intimate partner violence during the lockdown.
- **People dying in developing countries** due to the pandemic is double when compared to people dying in the developed nations.
- The gap between the **wealthiest and the poorest** in society has grown during the pandemic
- Inequality contributes to the death of one person every 4 seconds.

- Inequality is also at play in the **climate crisis**, with the world's richest 1% emitting more than twice as much CO₂ as the poorest 50% of the world.
- Despite the 2021 COP26 climate negotiations the leaders of **rich countries are failing** to prevent further planetary destruction.
- **Climate breakdown kills** in a variety of ways: malnutrition, diseases, extreme heat, and more intense and frequent weather-related natural disasters.

Measures that can be taken by the government to tackle the inequality issues

- **Tax the new wealth made** since the start of the pandemic through permanent wealth and capital taxes.
- Invest the trillions that could be raised by these taxes in progressive **spending on**

universal healthcare and social protection, climate change adaptation, and gender-based violence prevention and programming.

- **Tackle sexist and racist laws** that discriminate against women and racialized people, and create new gender-equal laws to uproot violence and discrimination.
- Define policies that will ensure women, racialized and other **oppressed groups are represented** in all decision-making spaces.
- **End laws that undermine the rights of workers** to unionize and strike, and set up stronger legal standards to protect them.
- **Waive intellectual property rules** over COVID-19 vaccine technologies to allow more countries to produce safe and effective vaccines to usher in the end of the pandemic.

US SENATORS INTRODUCE BILL TO END CHINA'S 'CHOKEHOLD' ON AMERICA'S RARE EARTH SUPPLIES

Two senators in the United States have proposed a law aiming to end China's alleged "chokehold" on rare-earth metal supplies.

Rare Earth Elements:

- Rare Earth Elements (REEs) are a **group of seventeen chemical elements** that occur together in the periodic table, also known as **Lanthanides**.
- The group consists of **15 lanthanide** elements (lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium) **along with Scandium and Yttrium**.
- **Scandium and yttrium** are considered rare earth elements since they tend to **occur in**

the same ore deposits as the lanthanides and **exhibit similar chemical properties**.

Common Properties of REEs:

- The rare earths are **silver, silvery-white, or gray metals**.
- The metals have a **high luster** but tarnish readily in air.
- The metals have **high electrical conductivity**.
- The rare earth metals naturally occur together in minerals (e.g., monazite is a mixed rare earth phosphate).

India and REEs:

Reserves:

- India has the **world's fifth-largest reserves** of rare earth elements, nearly twice as much as Australia.
- India has about 6 percent of global REE reserves.

Production:

- India produces a miniscule **1 percent of global supply**.
- It **imports** most of its rare earth needs in finished form from **China**.

Scope:

- India has an extremely **high possibility of discovery** of new deposits along its coastline and hard rock carbonatites that exist all over the peninsula.
- Large tracts of the Indian Ocean coastline from East Africa to Myanmar, Thailand,

Indonesia, and Australia are also host to rich REE containing mineral sands.

Steps Taken by India to increase REE production:

- In order to take advantage of the REE reserve, the government set up, a Mini-Ratna Company, **Indian Rare Earths Limited (IREL)**.
- It produces/sells six heavy minerals namely ilmenite, rutile, zircon, monazite, sillimanite, and garnet as well as various value-added products.
- IREL enjoys a **monopoly** over the primary mineral that contains REEs: monazite beach sand, found in many coastal states.
- IREL's focus is to **provide thorium**, extracted from monazite, to the Department of Atomic Energy.

RUBIN MUSEUM TO RETURN NEPALESE RELICS THOUGHT TO HAVE BEEN STOLEN.

Rubin Museum will return Nepalese relics thought to have been stolen, one relic being the upper section of a 17th century wooden torana form a temple complex in Patan called the Yampi Mahavihara.

- Torana is a free-**standing ornamental or arched gateway** for ceremonial purposes.

- It is seen in the **Hindu, Buddhist and Jain architecture** of the Indian subcontinent, Southeast Asia and parts of East Asia.
- It is also referred to as **Vandanamalikas**.

WORLD EMPLOYMENT AND SOCIAL OUTLOOK: TRENDS 2022

Recently, the International Labour Organization (ILO) released the World Employment and Social Outlook Trends (WESO Trends) 2022.

World Employment and Social Outlook Trends (WESO Trends) 2022:

- **WESO Trends is a comprehensive study on employment data of the world.**
- The report provides **detailed labor market estimates for 2022 and 2023.**

Findings of WESO Trends 2022:

- Global **unemployment rate to remain above pre-Covid-19 levels until at least 2023.**
- For the year 2022, the unemployment level is estimated at 207 million.
- It was around 186 million in 2019. (**Around 1.2% difference**)
- The **European and North American nations are recovering well.**
- But, regions of **Southeast Asia, Latin America, and the Caribbean have shown lenient recovery.**
- At the national level, **high-income Nations are faring the best**, while lower-middle-income Nations are faring the worst.
- In 2022, the **employment-to-population ratio** is estimated to be **55.9%**. This is **1.4% below the 2019 level.**
- During **2019 and 2020, the global labor force participation rate has fallen by 2%**. It is projected to recover only partially to just below 59.3% by 2022.
- In 2022, there **will be a working-hour deficit equivalent to 52 million full-time jobs.**

Suggestions of WESO Trends 2022:

Human-centered recovery from the COVID-19 crisis requires:

- **Rebuilding the economy to address systemic and structural inequalities.** It also includes a **sustainable developmental approach.**
- Implementation of **four pillars through Fiscal Policy:** inclusive economic growth and development; protection of all workers; universal social protection; and social dialogue.
- Capacities of public administrations and employers' and workers' organizations to

participate in **Social dialogue** are required to be strengthened.

International Labour Organization (ILO):

- **Established:** 1919 (187 members)
- **Headquarters:** Geneva, Switzerland
- **Objective:** Labor Empowerment
- ILO is the **first and oldest Specialized Agency of the United Nations (UN).**
- **ILO brings together governments, employers, and workers.** ILO is working in the field of labor empowerment. For this, it has framed **International Labor Standards.**

Flagship reports published by ILO:

- World Employment and Social Outlook
- World Employment and Social Outlook: Trends
- World Social Protection Report
- Global Wage Report

International Labor Standards by ILO:

These are the 8 global legal agreements for the quality working environment and working conditions. These are also called the core/fundamental Conventions of ILO.

- Out of these 8, **India has ratified 6 ILO conventions.**
- The remaining two unratified conventions include:
 - **Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87)**
 - **Right to Organise and Collective Bargaining Convention, 1949 (No. 98).**

INDONESIA PASSES LAW PAVING WAY FOR CAPITAL'S MOVE TO BORNEO

Recently, Indonesia's parliament passed a law approving the relocation of its capital Jakarta to a place in Borneo Island that will be named as "Nusantara".

Indonesia is relocating its capital from Jakarta?

- **Rising sea levels:** Due to climate change, the **water levels in the Java Sea are rising** and weather events are becoming more extreme.
- It is being predicted that a third of the city could be underwater by 2050.
- **Giant Garuda**, a coastal development project was launched by the government, to protect the Jakarta city from floods.
- **Severe congestion** on densely populated Java Island has resulted in poor quality air and traffic gridlocks.
- Jakarta is the **largest Indonesian city** with a population of 1 crore people.
- **Serious Infrastructure problems:** Jakarta, being the centre for administration, governance, finance and trade, has inevitably led to **relentless construction** in the city.
- Infrastructures prevents water seepage, resulting in increased run-off water.

Nusantara

- The new capital is named **Nusantara**, an old Javanese term which means "**archipelago**".
- It is located in the **North Penajam Paser and Kutai Kartanegara** regions of

IN KOHIMA, A CEMETERY WITH A TENNIS COURT

The United Kingdom-based Commonwealth War Graves Commission (CWGC) has listed Kohima's tennis court cemetery as a World War site with unusual features.

Battle of Kohima:

- The battle took place in Kohima, today the capital of Nagaland, **in 1944.**

the **East Kalimantan** province, on the lesser populated **island of Borneo.**

- East Kalimantan is located over 1,400 km from Jakarta and it does not have a history of natural disasters.
- East Kalimantan is an area with immense **water resources and habitable terrain.**
- The plans for new capital depict a utopian design aimed at creating an **environmentally friendly "smart" city.**
- The **new capital** will act as the **centre of the government**, whereas **Jakarta** will continue to be **Indonesia's business and financial centre.**

Criticism of New location:

- It could **damage ecosystems** in the region, and **threaten rainforests** that are home to Borneo's endangered species.
- The forests of the East Kalimantan region are home to orangutans, sun-bears and long-nosed monkeys.

Key Fact:

- **Malaysia** moved its government to Putrajaya from Kuala Lumpur in 2003.
- **Myanmar** moved its capital to Naypyidaw from Rangoon in 2006.

- It was one of the **fiercest battles of the Second World War.**
- The battle is often referred to as the Stalingrad of the East.
- The British National Army Museum voted this battle as "**Britain's Greatest Battle**".

Causes of Battle:

- On the height of the Second World War, the **Japanese planned an incursion** in India via Burma.
- The plan was codenamed **Operation U Go**.
- The Japanese forces wished to attack the garrison stationed at Kohima and take it after which they would **take Assam and then march on to Delhi**.

Reasons for Japanese failure:

Resistance:

- The British Indian troops held on their **strategic positions** and troubled the Japanese with their artillery fire.

Lack of Adequate Supplies:

- The Japanese brought along with them about 5000 oxen to be **slaughtered for food**, but most of the **animals died on the way**.

Timely Reinforcement:

- **British reinforcements** arrived in Dimapur to relieve the forces at Kohima.
- This caused the Japanese to fall back.
- The **Japanese** were also **defeated** during the **in the subsequent Battle of Imphal**.

Significance:

- Defeat for the British Indian Army would have meant that the **Japanese could strike further into India**.

- Kohima was of key strategic importance, at the **highest point of the pass** through the jungle mountains to Dimapur, now Nagaland's commercial hub adjoining Assam.
- The fall of Dimapur would have meant leaving the Allied defenders of Imphal at the **mercy of the Japanese soldiers** fighting alongside Subhash Chandra Bose's Indian National Army.

Cemetery:

- On April 3 1944, those who had fallen in the defence of Kohima were buried on the battlefield, which later became a **permanent CWGC cemetery**.

Commonwealth War Graves Commission (CWGC):

- It is an intergovernmental **organisation of six independent member states**.
- The members are **Australia, Canada, United Kingdom, India, New Zealand and South Africa**.
- The commission was founded by **Sir Fabian Ware** and constituted through **Royal Charter in 1917** as the **Imperial War Graves Commission**.
- **Function:** To mark, record and maintain the graves and places of commemoration of Commonwealth of Nations military service members who died in the two World Wars.

DRAMATIC CHANGES AT HUNGA TONGA-HUNGA HA'APAI

The Hunga Tonga-Hunga Ha'apai volcano, which lies along the Pacific rim, erupted recently.

Hunga Tonga-Hunga Ha'apai volcano:

- They are twin uninhabited **volcanic islands** in the **South Pacific region**.
- The islands were merged by a volcanic eruption in 2009.

- It lies along the **Pacific 'Ring of fire'**.
- It is over 60 kilometres from the island nation of **Tonga**.
- It is part of the highly active **Tonga-Kermadec Islands volcanic arc**.
- The arc is a subduction zone extending from New Zealand north-northeast to Fiji.

Pacific Ring of Fire:

- The Pacific 'Ring of Fire' is an area along the **Pacific Ocean**.
- It is home to about 75 per cent of the world's **volcanoes**.
- About 90 per cent of the **world's earthquakes** occur here.
- It is stretched over 40,000 kilometres and traces from New Zealand in a circular arc covering Tonga, Kermadec Islands and stretching eastward to the Aleutian Islands, then southward along the western coast of **North & South America**.

Tectonic Plates

- The area is along several tectonic plates including the **Pacific plate**, Philippine Plate, Juan de Fuca plate, Cocos plate, **Nazca plate and North American plate**.

Movement of Plates

- The movement of the plates or tectonic activity makes the area witness abundant **earthquakes and tsunamis**.
- Along much of the Ring of Fire, the tectonic plates move towards each other creating **subduction zones**.
- One plate gets pushed down or is subducted by the other plate.
- As this subduction happens, rocks melt, become magma and move to Earth's surface and cause **volcanic activity**.

GLOBAL CYBERSECURITY OUTLOOK 2022

The World Economic Forum has recently launched a report entitled 'Global Cybersecurity Outlook 2022', at their annual Davos summit.

Findings of the report:

- The accelerating pace of **digitalization** has led to a record-breaking year for cybercrime.
- 41% business executives believe that cyber resilience is integrated into enterprise risk management strategies while 13% of cyber leaders feel confident that their organisations are cyber resilient.
- **Recruiting and retaining cybersecurity talent:** There is a gap in the cybersecurity due to **shortage of skills and lack of**

adequate personnel, leaving the company vulnerable to attacks.

Ever-growing threat of ransomware:

- **Ransomware attacks, social-engineering attacks and malicious insider activity** are the top three cyberattacks most organizations are concerned about.

Cyber resilience of small and medium businesses:

- Cyber resilience of small and medium businesses (SMBs) is seen as a critical **threat to supply chains, partner networks and systems**.

- It is believed that automation and machine learning will introduce the biggest transformation in cybersecurity in the next two year.

Suggestion:

- Clear and **productive regulations** are needed, that would allow and encourage information sharing and collaboration.
- Cybersecurity must be **prioritized** in all domains of society and the economy.
- The cyber framework of a country should promote **stronger cyber-resilience** position rather than cyber-defensive posture.

NOC FOR RESELLING OF INTERNATIONAL SIM CARDS

Recently, the Department of Telecom (DOT) revised terms & conditions for issue/renewal of NOC for sale/rent of international roaming SIM cards/ global calling cards of foreign operators in India.

Revised Policy:

- It mandates the NOC holders to make **provision for providing information** on customer care service, tariff plans, etc.
- Provision has been made to **strengthen billing and consumer grievance redressal**

mechanism to facilitate time bound resolution of grievance by the NOC holders.

- It also streamlines the application process for the NOC holders in line with the other licenses/ registrations etc.

Roaming

- It enables a mobile user to automatically make and receive calls, send and receive data, or access other services when travelling outside the **geographical coverage area** of their home network.

SUSPECTED DRONE ATTACKS CAUSED EXPLOSION IN ABU DHABI, SAYS UAE

Recently, a suspected drone attack in Abu Dhabi, United Arab Emirates (UAE), caused multiple explosions.

- **Yemen's Houthi group** has taken responsibility for the attack
- UAE is part of the Saudi-led coalition in Yemen fighting Houthi rebels.

Who are Houthis?

- The roots of Houthi movement can be traced to "**Believing Youth**", a Zaydi revivalist group founded by Hussein al-Houthi and his father, Badr al-Din al-Houthi, in the early 1990s.

Genesis:

- Badral-Din started building vast social and religious networks among **the Zaydis of Yemen**, who make up one-third of the Sunni-majority country's population.

- The Zaydis are named after **Zayd Bin Ali**, the grandson of Imam Ali.
- Zayd Bin Ali had led a revolt against the Ummayad Caliphate in the eighth century.
- He was killed, but it led to the rise of the **Zaydi sect**.
- **Badral-Din** and his son launched the 'Believing Youth', in order to reorganize the Zaydi minority.
- The **movement turned political** and started attacking the regime of Ali Abdullah Saleh (first President of Yemen) and his support for the U.S.'s war on terror.
- In 2004, Yemen government issued an arrest warrant against Hussein al-Houthi.
- Since then, the Government launched **multiple military campaigns** in Sa'dah, the Zaydi stronghold, to end the resistance, which was locally called the Houthis movement.

What led to the rise of Houthis?

- When protests broke out in Yemen in 2011 as part of the Arab Spring protests, the **Houthis** backed the **agitation**.
- Yemen, under the tutelage of Saudi Arabia and the UAE, started a **national dialogue** to resolve internal differences.

- The Houthis were part of the dialogue.
- Houthis believed that the proposed federal solution, was intended to weaken the movement by the Government.
- President Saleh, and some of the members launched a joint military operation.
- By January 2015, the Houthi-Saleh alliance had captured Sana'a and much of **northern Yemen**, including the Red Sea coast.

Why did Houthis target the UAE?

- In 2018, when the UAE-backed forces were making advances in Yemen, the Houthis claimed attacks against the Emirates.
- Since then, the **UAE pulled out its troops from Yemen** and offered support to the Southern Transitional Council.
- Recently, **Giants Brigades: a militia group** made up of Southern Yemenis and the Joint Forces turned their guns against the Houthis.
- They inflicted major damages on the Houthis in Shabwah on the **Arabian coast**.
 - Therefore, the Houthis attacked on **Abu Dhabi**, by flying armed drones.

PERU DECLARES 'ENVIRONMENTAL EMERGENCY' AFTER OIL SPILL

Recently, the Peruvian government declared a 90-day environmental emergency in damaged coastal territories, after an oil spill that saw 6,000 barrels of crude oil pour into the sea.

Location of Peru:

- Peru is a country in **western South America**.
- Its borders lie in sparsely populated zones except for **Lake Titicaca basin** in the southeast.

- The boundaries with Colombia to the northeast and Brazil to the east traverse lower ranges or **tropical forests**.
- The borders with Bolivia to the southeast and Ecuador to the northwest run across **the Andes**.

What is Oil Spill?

- Oil spill is a **type of pollution** that can occur on land or on water.

- It is basically the release or **spillage of petroleum products**.
- Most of the oil spills are found in oceans.

Causes of Oil Spill:

Natural Occurrences

- **Organic matter** from dead living organisms is vital in the formation of oil.
- Therefore, oil exists in most parts of the earth but deep down.
- Natural occurrences like **hurricanes, earthquakes** and sea storms cause natural oil spills.

Oil Transportation

- Large oil spills in the world are due to **oil transportation**.
- Oil tankers usually have faulty issues or **collide with other ships**, hence causing massive oil spills.

Oil Drilling

- Many **oil rigs** are being drilled in seas, some of which have **technical issues**, hence causing oil spillage.

Drainage Systems

- People intentionally **drain oil products** without considering their effects on the environment.
- This happens when mechanics spill oil after changing oil from vehicle or engines.
- Most of these drainage systems are connected to **large water bodies**.
- This is a hazardous cause of aquatic life.

War

- Most countries in the middle east are rich in oil that has led to an unending fight between **militants and international soldiers**.
- Due to many oil wells, **smuggling** has been a key financial route for the militants. These have also caused massive oil spills.

Effects of Oil Spill:

Sea Plants

- Sea plants are important for the survival of marine animals.
- When an oil spill happens, there is **no entry of oxygen** in the sea.
- This leads to the death of sea plants due to lack of oxygen.

Sea Animals

- **Aquatic animals** are the most affected when an oil spill happens.
- They die due to lack of oxygen in the sea.

Human Health

- Petroleum products contain **toxic chemicals** such as benzene, hydrocarbons, polycyclic aromatic hydrocarbons, and toluene.
- When these chemicals are inhaled by humans it causes **health problems**.
- **They affect lungs**, which are a major organ responsible for breathing.

Coral Reefs

- **Coral reefs** act as habitat to marine animals.
- Once coral reefs come into contact with oil, they tend to stop its **growth**.
- Most affected are **marine invertebrates** which depend on corals for survival.

Lack of Clean Drinking Water

- Oil spills can affect the drinking water bodies as well.
- **Lack of clean drinking water** may lead to waterborne diseases hence causing death.

Oil-spill Cleanup:

- At present, no method has been developed for cleaning up major oil spills. Though improvements in technology have coordinated responses.
- **Floating booms** can be placed around the source of the spill and harbors to reduce the spreading of an oil slick over the sea surface.
- **Skimming**: a technique that use booms is most effective in calm waters.
 - It involves various mechanisms that physically separate the oil from the water and place the oil into collection tanks.

- Another approach is to use **sorbents** like straw, volcanic ash, that absorb the oil from the water.

Bunker Convention:

- **International Convention on Civil Liability for Bunker Oil Pollution Damage (BUNKER)** was adopted on 23 March 2001.
- **Aim**: To ensure adequate and effective compensation is available to persons who suffer damage caused by spills of oil, when carried as fuel in ships' bunkers.
- The Convention applies to **damage caused on the territory**, including the territorial sea and in **economic zones of States Parties**.

STRATEGIC SIGNIFICANCE OF BRIDGE CHINA IS BUILDING ON PANGONG TSO

Recently, China is building a new bridge linking the northern and the southern banks of Pangong Tso closer to its side of the Line of Actual Control.

Location of Pangong Tso

- **Pangong Tso** is a **long narrow, deep, landlocked lake** situated at a height of more than **14,000 ft in the Ladakh Himalayas**.
- The western end of the lake lies **54 km to the southeast of Leh**.

- Approximately 50% of the length of the overall lake lies within Tibet China whereas, 40% lies in Ladakh India.
- The lake is in the process of being identified under the **Ramsar Convention** as a wetland of international importance.
- The Line of Actual Control runs along with the land and through the waters of Pangong Tso.
- **Strategic importance**: Very close to Chusul Valley, which was one of the battlefronts between India and China during the 1962 war.

EU PROPOSES DIGITAL RIGHTS, PRINCIPLES IN GLOBAL FIRST

Recently, the European Commission in a global first proposed a set of digital rights and principles.

Digital Rights & Principles:

- **Aim:** To protect people's rights, support democracy and ensure a fair and safe online environment.
- They cover **digital devices, ensuring green transition goals, with**

environmental impact and energy consumption.

- The declaration establishes that what is **illegal offline** should be illegal online for all people.
- It will focus on **technological solutions**, respect people's rights and promote inclusion.
- They will provide a **guideline for policymakers** and companies when dealing with new technologies.

SERBIA REVOKES RIO TINTO LITHIUM PROJECT LICENCES AMID PROTESTS

Recently, the Serbia government has revoked the licenses for lithium mining to Rio Tinto, an Anglo-Australian multinational mining organisation, following protests.

Genesis of the protest:

- The protestors have been pointing out that lithium mining would **pollute the drinking water**.
- Environmentalists are concerned that lithium would **damage the region's farmland, ecosystem, and water**.
- They want the Serbian government to **ban all future borate and lithium mining projects** in the country.
- Serbia is ranked as **Europe's fifth** and the **world's 32nd most polluted country**.
- The protest in the country had begun last year after Serbia passed two laws – **Law on Referendum and Expropriation law**, giving access to mining companies in the country.

Two controversial laws?

Law on Referendum:

- The Referendum law **lowers the referendum** and states that it would not anymore require 50 per cent of the registered voters to turn out for a referendum to pass.
- It would **make it difficult for citizens to protest** against projects that spread pollution.

Expropriation law:

- The expropriation law would **allow for a speedy expropriation of property**, specifically within five days, along with compensation.
- It would make it immensely easy for the state's government to acquire private land.

EU LAUNCHES WTO CASE AGAINST CHINA FOR 'TARGETING' LITHUANIA

The European Union launched a case against China at the World Trade Organization (WTO) for targeting Lithuania over its stance on Taiwan.

Location of Lithuania:

- Lithuania, officially the Republic of Lithuania, is a country in the **Baltic region of Europe**.
- It is one of three Baltic states and lies on the **eastern shore of the Baltic Sea**.
- Lithuania shares land borders with Latvia to the north, Belarus to the east and south, Poland to the south, and Russia to the southwest.
- Its **capital and largest city is Vilnius**.

Relations between India and Lithuania:

Economic:

- In October 2015, India and Lithuania signed a **bilateral agreement on co-operation in agriculture**.
- They also agreed to increase their co-operation in sectors such as food and dairy processing.
- Agreements such as **Bilateral Investment Promotion and Protection Agreement** and **Double Taxation Avoidance Agreement** have been signed between both the countries.

Cultural:

- There is growing interest in Lithuania for Indian dance and **music, yoga, ayurveda**, and the works of Rabindranath Tagore.
- **Ayurveda centres** function in Vilnius and Kaunas.
- The International Society for Krishna Consciousness (ISKCON) is present in Lithuania.

MOST VULNERABLE COUNTRIES UNABLE TO ACCESS GREEN CLIMATE FUND FOR ADAPTATION

Recently, a study on global climate change adaptation finance was released by Green Climate Fund (GFC).

Highlights:

- Countries with the highest vulnerability to climate change have missed out on finance for adaptation through the Green Climate Fund (GFC).
- As per GFC, there should be 50% investment in **resources** to mitigation and 50% to adaptation in grant equivalent.

- This makes 154 countries eligible for funding, of which 84 received \$2.5 billion GCF adaptation funding between 2015 and 2019.
 - 16 of the 37 countries most **vulnerable to climate change** did not receive GCF funding.
 - Most of them are from the **Africa region**.

Challenges in accessing climate funds

- Countries compete for funding by submitting proposals in adherence to certain guidelines and criteria.
- But many of the vulnerable countries suffer from “**poor governance, weak institutions and a lack of financial and human capacities in their administrations**”.
- Countries like Eritrea, Somalia or Yemen with **weaker capacity** have not been able to access funding.
- A combination of **high vulnerability, poor governance and often violent conflict** are major barriers are major barriers.
- **Complex and competitive processes** entrap vulnerable countries and deepens their conditions of poverty and poor development.

Findings from other studies:

- The **annual adaptation costs** in developing countries to reach \$140 to 300 billion per year by 2030, and \$280-500 billion by 2050.
- Only a fifth (20.5%) of all **climate financing** went to least developed countries (LDCs) in 2017-18, and 3% to small island developing states (SIDS).

About Green Climate Fund (GCF):

- GCF was established by 194 countries of the UN **Framework Convention on Climate Change** in 2010.
- It allocates its resources to **low-emission and climate-resilient projects and programmes** in developing countries.
- **Headquarters:** Republic of Korea.
- **Aim:** To support a paradigm shift in the global response to climate change.

Functions:

- **Transformational planning and programming:** by promoting integrated strategies, and policymaking to maximize the co-benefits between mitigation, adaptation and sustainable development.
- **Catalyzing climate innovation:** by investing in new technologies, business models, and practices to establish a proof of concept.
- **De-risking investment to mobilize finance at scale:** by using scarce public resources to improve the private finance for adaptation, nature-based solutions, least developed countries (LDCs) and small island developing states (SIDS).
- **Mainstreaming climate risks and opportunities** into investment decision-making to align finance with sustainable development: by promoting methodologies, standards and practices that foster new norms and values.

THE GEO-POLITICS OF GAS PIPELINES

The US State department announced it no longer supported the EastMed natural gas pipeline on grounds of financial viability, environmental concerns and political tensions.

Why did America Pull out of the pipeline deal?

- The US State department announced it no longer supported East Mediterranean (EastMed) natural gas pipeline on grounds of financial viability, environmental concerns and political tensions.

- The pipeline plan was vulnerable to many vagaries of technology, engineering and Turkish belligerence.
- Turkey is a member of North Atlantic Treaty Organization (NATO) and it is always at war with Cyprus.
- Viewing Turkey under the influence NATO and as a gateway to Black Sea, the US pulled out from EastMed.

EastMed Pipeline:

- The Eastern Mediterranean pipeline or simply EastMed is a planned **offshore/onshore natural gas pipeline**.
- **Location:** It directly connects East Mediterranean energy resources

to **mainland Greece via Cyprus and Crete**.

- **Significance:** The project, currently in design, will **transport natural gas** from the off-shore gas reserves in the **Levantine Basin into Greece**.

Genesis:

- The **Energy Triangle of Greece, Cyprus, and Israel** signed an intergovernmental agreement for the EastMed gas pipeline in Tel Aviv in 2019.
- The agreement had support of USA.
- American interest on the pipeline is explained by **US's demand** that its European partners maintain a diversification policy of their energy imports and lessen dependence on Russian Natural Gas.

UNESCO LISTS VIKING-ERA WOODEN SAILBOATS ON HERITAGE LIST

Recently, the U.N.'s culture agency added Nordic "clinker boats" to its list of traditions that represent the Intangible Cultural Heritage of Humanity.

- Nordic clinker boats are small, open, wooden boats between five and ten metres long.
- The term "clinker" is thought to refer to the **way the boat's wooden boards were fastened** together.

- Wooden clinker boats are characterized by the use of **overlapping longitudinal wooden hull planks** that are sewn or riveted together.
- For almost two millennia, the people of the Nordic region (Finland, Norway and Sweden) have been building clinker boats

NOR'EASTER THAT BATTERED US EAST COAST WITH DEEP SNOW AND POWERFUL WINDS

A major winter storm with hurricane-force winds battered much of the United States East Coast, triggering transportation chaos and power outages across the region.

What is a bomb cyclone?

- A bomb cyclone, which occurs through the process known as **bombogenesis**, is a winter hurricane.
- The word "bombogenesis" is a combination of **cyclogenesis, which describes the**

- formation of a cyclone or storm, and bomb.
- This can happen when a **cold air mass collides with a warm air mass**, such as air over warm ocean waters.
 - A bomb cyclone occurs when a **mid-latitude cyclone rapidly intensifies**, or quickly drops in atmospheric pressure, marking the strengthening of the storm.
 - These cyclones form when air near Earth's surface rises quickly in the atmosphere, **triggering a sudden drop in barometric pressure** – at least 24 millibars within 24 hours.

How is bomb cyclone different from hurricane?

- **Bomb cyclones have cold air and fronts:** Cold air rapidly weakens hurricanes, while it is an essential ingredient for bomb cyclones.
- **Bomb cyclones form during winter:** Hurricanes form from late spring to early fall, while bomb cyclones form from late fall to early spring.

- **Bomb cyclones form at higher latitudes:** Hurricanes form in tropical waters, while bomb cyclones form over the north-western Atlantic, north-western Pacific and sometimes the Mediterranean Sea.
- They are also common over warm bodies of water, such as the Gulf Stream.

Effects of a Bomb Cyclone

- **Flooding:** A bomb cyclone often brings rainfall, which can cause flooding.
- **Blizzard:** A bomb cyclone can bring snowfall accompanied with wind, causing a blizzard.
- **Power outages:** The strong weather conditions such as wind, snow, and rain, causes power outages in many regions.
- **Travel restrictions:** People gets stranded during the occurrence of a bomb cyclone, due to the flights getting cancelled, roads being blocked etc.

ICE-WALL COOLANT LEAKS FROM JAPAN'S FUKUSHIMA NUKE PLANT

Recently, two storage tanks had been leaked about four tonnes of coolant solution at Fukushima's nuclear plant.

Genesis:

- Due to earthquake induced tsunami in March 2011, Fukushima nuclear plant in Japan was closed permanently due to power supply cut and malfunctioning in cooling of three reactors.
- Since then, a wall of ice is **used that has prevented the groundwater from seeping into the reactor or nuclear plant.**

The wall of ice:

- It is a frozen soil wall around the four crippled reactor units which blocks the flow of groundwater and prevent its mixing with contaminated water.
- In this, a **environmentally safe refrigerant and the chilled brine flows through the pipes** to a depth of 30 meters, **freezing the surrounding soil.**
- It is in **operation since 2016, having a circumference of approximately 1500 meters.**
- It is more like a barrier of frozen soil.

How does a nuclear reaction work?

Nuclear Fusion Plant:

- In a fusion reaction, two light nuclei (Deuterium and Tritium) merge to form a single heavier nucleus. This makes the atom unstable, releasing energy.
- Sun and stars produce light due to the nuclear fusion of hydrogen and helium.

Nuclear fission Plant:

- In fission a **neutron collides with a uranium atom** and splits it, releasing a large amount of energy in the form of heat and radiation.
- More **neutrons are produced when a uranium atom splits**. These neutrons continue to collide with other uranium atoms. This **process repeats itself over and over again**, resulting into production of energy.

IRAN, RUSSIA AND CHINA BEGIN NAVAL DRILL

Recently, exercise **CHIRU-2Q22** was conducted in the Gulf of Oman by Russian, Chinese and Iranian navies.

- **Aim:** For deepening practical cooperation among the navies of the three countries.
 - Iran, Russia and China began a joint naval drill in the Indian Ocean aimed at **boosting marine security**.
- Iran's 11 of its vessels were joined by three Russian ships including a destroyer, and two Chinese vessels. Iran's Revolutionary Guard will also participate with smaller ships and helicopters.
 - It is the **third joint naval drill** between the countries since 2019.



NIA REGISTERS UAPA CASE AGAINST SFJ'S MULTANI

Recently, the central agencies have booked 45-year-old under sections related to criminal conspiracy and

waging war against India, among others under **Unlawful Activities Prevention Act**.

Unlawful Activities Prevention Act (UAPA), 1967

- It is a law that **prevents unlawful activities** that may cause harm to the **integrity and sovereignty** of the government.
- It empowers the government to designate even an **individual** as a terrorist.
- The objective is to provide for the more effective **prevention** of certain unlawful activities of individuals and associations and for matters connected there with.

Genesis

- The UAPA originated from a **constitutional amendment enacted in 1963** on the recommendation of the **National Integration Council (NIC)**.
- The amendment allowed Parliament to make laws imposing restrictions on the fundamental rights to freedom of expression, to assemble without arms and to form associations.
- These restrictions were to be imposed only to protect **sovereignty and integrity** of India.
- The 1967 version of the UAPA gave the **central government** the power to deal with activities directed against the sovereignty and integrity of India.
- Between **1967 and 2004**, the UAPA was not a terror law.
- In December **2004**, Parliament inserted a chapter dedicated to **punishing terrorist activities**.

The Unlawful Activities (Prevention) Amendment Act, 2019

- The **central government** may designate an organisation as a terrorist organisation if it:
 - Commits or participates in acts of terrorism
 - Prepares for terrorism
 - Promotes terrorism
 - Otherwise involved in terrorism.
- An investigating officer is required to obtain the prior approval of the **Director General of Police** to seize properties that may be connected with terrorism.
- Investigation of cases may be conducted by officers of the rank of **Deputy Superintendent or Assistant Commissioner of Police** or above.
- The Act defines terrorist acts to include acts committed within the scope of any of the treaties listed in a schedule to the Act.
 - Convention for the Suppression of Terrorist Bombings (1997)
 - Convention against Taking of Hostages (1979)
 - International Convention for Suppression of Acts of Nuclear Terrorism (2005).
- It extends the pre-chargesheet custody period from **90 days to 180 days**.

SIKHS FOR JUSTICE (SFJ)

It is a **US-based group that was** formed in 2007.

- **Aim:** Seeking a **separate homeland for Sikhs** a Khalistan in Punjab.
 - Under SFJ, a secessionist campaign called **Referendum 2020** seeked to **liberate Punjab** from Indian occupation.

UNION EDU MINISTER DHARMENDRA PRADHAN LAUNCHES 100-DAY READING CAMPAIGN 'PADHE BHARAT'

Recently, Union Education and Skill Development Minister launched a 100 days Reading Campaign 'Padhe Bharat'.

- **Aim:** To improve **learning levels** of students as it develops creativity, critical

thinking, vocabulary and the ability to express both verbally and in writing.

- It helps children to relate to their surroundings and real-life situation.

MODI RELEASES 10TH INSTALMENT OF AID UNDER PM-KISAN SCHEME

Recently, PM released 10th instalment of PM-KISAN.

Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)

- PM Kisan is a **Central Sector scheme** with 100% funding from Government of India.
- It is a **voluntary** and contribution-based pension scheme.
- **Aim:** To supplement the financial needs of the small and marginal Farmers in procuring various inputs to ensure proper crop health and appropriate yields.

- Under the scheme an income support of 6,000/- per year in **three equal** instalments are provided to all land holding farmer families.
- **State Government** and UT administration will identify the farmer families which are eligible for support as per scheme guidelines.
- The fund will be **directly** transferred to the bank accounts of the beneficiaries.

Eligible

- All **landholding farmers'** families, which have cultivable landholding in their names are eligible to get benefit under the scheme.

Features

Exclusion

from

schemes

Scheme Exclusion

The following categories of beneficiaries of higher economic status shall not be eligible for benefit under the scheme.

- 1 All Institutional Land holders.
- 2 Farmer families which belong to one or more of the following categories:.



- i) Former and present holders of constitutional posts
- ii) Former and present Ministers/ State Ministers and former/present Members of Lok Sabha/ Rajya Sabha/ State Legislative Assemblies/ State Legislative Councils, former and present Mayors of Municipal Corporations, former and present Chairpersons of District Panchayats.
- iii) All serving or retired officers and employees of Central/ State Government Ministries /Offices/Departments and its field units Central or State PSEs and Attached offices /Autonomous Institutions under Government as well as regular employees of the Local Bodies
(Excluding Multi Tasking Staff /Class IV/Group D employees)
- iv) All superannuated/retired pensioners whose monthly pension is Rs.10,000/- or more
(Excluding Multi Tasking Staff / Class IV/Group D employees) of above category
- v) All Persons who paid Income Tax in last assessment year
- vi) Professionals like Doctors, Engineers, Lawyers, Chartered Accountants, and Architects registered with Professional bodies and carrying out profession by undertaking practices.

THIRD BOLLARD PULL TUGS 'BALRAJ' DELIVERED TO NAVAL DOCKYARD, VISAKHAPATNAM

Recently, third tug in series, "Balraj" was delivered to Naval Dockyard, Visakhapatnam.

- Induction of **Bollard Pull Tugs** will enhance the capability to meet high operational requirements of Fleet assets of Indian Navy.

Balraj:

- Tugs "Veeran" and "Balram" have already inducted at Naval Dockyard, Visakhapatnam and Naval Dockyard, Mumbai.
- **Balraj** is the third tug in the series.

Features:

- The tugs have been designed and built under classification rules of **Indian Register for Shipping (IRS)**.
- They are capable of assisting large naval ships including, **Aircraft Carrier** and Submarines in berthing, un-berthing, turning and manoeuvring in confined waters and in harbor.
- They also provide **afloat firefighting cover/assistance** to ships alongside/anchorage and the capability for **Search and Rescue operations**.

THE MINISTER LAUNCHES THE WEB PORTAL FOR PM'S AWARDS FOR EXCELLENCE IN PUBLIC ADMINISTRATION FOR THE YEAR 2021-22

Recently, a Web Portal for PM's Excellence Award in Public Administration was launched.

PM's Excellence Award in Public Administration:

- The scheme was **instituted in 2006**.
- **Aim:** To acknowledge, recognize and reward the extraordinary and innovative work done by District/organizations of the Central, State Governments.
- It was **restructured** again in 2020, to recognize the **performance of District**

Collectors towards economic development of the district.

- The contribution of District Collectors would be recognized for:
 - Implementation of **Inclusive Credit Flow** to the Priority Sector
 - **Promoting people's movements** through Jan Bhagidari
 - **Improving Service Delivery** and Redressal of Public Grievances.
- The award also seeks to recognize the efforts of District level officials in **Namami Gange Program**.

PM MODI REMEMBERS RANI VELU NACHIYAR ON HER BIRTH ANNIVERSARY, SAYS SHE PERSONIFIES 'NARI SHAKTI'

PM paid tribute to Rani Velu Nachiyar on her birth anniversary.

Rani Velu Nachiyar (1730-1796)

- She was queen of **Sethupathi Dynasty** of Tamil Nadu (**Ramnad kingdom**).
- She was trained in war match weapons usage, martial arts like Valari, **Silambam (fighting using stick)**, horse riding and archery.
- She also had proficiency with languages like **French, English and Urdu**.
- Her **husband, Muthuvaduganathaperiya Udaiyathevar** (king of Sivagangai), was killed by British soldiers and the son of the **Nawab of Arcot**.

Contribution:

- After killing of her husband, she **lived** at Virupachi near Dindigul, **under protection of Hyder ali** for 8 years.
- During that time, she had **made alliance with Hyder ali** and Gopala Nayaker to **defeat Britishers**.
- Later, in 1780, she recaptured her Sivagangai with help of **Hyder Ali** and **Maruthu brothers**.
- She had **formed a woman's army** named "**Udaiyaal**" in honour of her adopted daughter, who died detonating a British arsenal.
- She considered as the **first queen to fight for the freedom from the East India Company**. Due to her valour, she is **known** by tamils as **Veeramangai** (brave women).
- She revolted for the freedom of India, **85 years before Jhansi Rani's** freedom struggle.

HOME MINISTRY PUSH TO INTELLIGENCE BUREAU'S COUNTER-TERRORISM GRID

Recently, Indian home minister asked to all Director General of Police (DGPs) for more intelligence input through Multi Agency Centre (MAC).

Multi Agency Centre (MAC):

- It was established by **Intelligence Bureau (IB) in 2001**.
- It is the nodal body for **sharing intelligence inputs**.
- It functions on 24x7 basis for **real time collation and sharing of intelligence** with other central Intelligence Agencies and all state polices.
- Establishment of MAC was suggested by **Kargil Review Committee, 1999**.

Intelligence Bureau (IB):

- The **IB, established in 1887**, is an Indian **domestic internal security** and counter-intelligence agency. It includes counter-terrorism tasks too.
- The **Research and Analysis Wing (RAW)**, established in 1968, specifically deals with **foreign intelligence**.
- It is working under the aegis of **Ministry of Home Affairs**, Government of India.
- IB Officers are either directly recruited or are deputed from **Central Armed Police Forces (CAPFs) and Indian Army**.
- IB is headed by a director, called **Director of IB**.

NATGRID (National Intelligence Grid)

- NATGRID is an **intelligence master database for counter-terrorism** purpose.

- It was established in 2009, in aftermath of 26/11 attacks in Mumbai (2008).
- It is functioning under the aegis of Ministry of Home Affairs, Government of India.
- These data sources include records related to immigration entry and exit, banking and financial transactions, telecommunication records etc. currently 21 agencies are part of it.
- The NATGRID database will be **accessible by main federal agencies** including,

- Central Bureau of Investigation (CBI),
- Directorate of Revenue Intelligence (DRI),
- Enforcement Directorate (ED),
- Central Board of Indirect Taxes and Customs
- Central Board of Direct Taxes (for Income Tax Department) (CBDT)
- Cabinet Secretariat, Intelligence Bureau (IB),
- Directorate General of GST Intelligence,
- Narcotics Control Bureau (NCB),
- Financial Intelligence Unit
- National Investigation Agency (NIA) etc.

AMENDMENT TO THE JAGANNATH TEMPLE ACT

Recently, the Odisha State Cabinet approved amendments to the Sri Jagannath Temple Act of 1954.

Genesis:

- In 1806, the then **British government** issued regulations for management of the Jagannath temple.
- Under these regulations, **Pilgrims** who visited the temple were expected to **pay taxes**.
- The British government was entrusted with appointing senior priests at the temple.
- After three years, the powers of management of the temple were given to the **King of Khordha**.
- After India gained Independence, the state of Odisha formally introduced the **Jagannath Temple Act, 1954**.

Provisions of the Jagannath Temple Act, 1954:

The act contains provision on

- Land rights of the temple
- Duties of the sevayat
- **Administrative powers** of the managing committee

- **Rights and privileges** of the Raja of Puri connected with the management of the temple.

Highlights of the Recent Amendment:

- **Decentralizes the power** to settle land related issues of the temple.
- Delegate powers to **temple administration** and officials for sale and lease of land in name of Jagannath temple.
 - Earlier, as per the Section 16 (2) of the Act, **approval** was required from the state government for the process.
- Through the sale of land, used and unused, the temple will generate additional corpus funds.

Jagannath Temple:

- It is a **Hindu temple** dedicated to **Jagannath** (Lord Vishnu).
- **Location:** Puri, Odisha
- The temple was built in the 12th Century AD by the ruler of Ganga dynasty king **Anantavarman Chodaganga Deva**.
- The construction of the temple was completed by **Anangabhimadeva III**.
- The **idol of Jagannatha** is made of wood.

- It is one of the 4 Holiest places pilgrimage sites in India.
- The other three are: Dwarika, Badrinath and Rameshwar
- The temple is famous for **annual Ratha Yatra**.
- The three principal deities are pulled on huge chariot.

Architectural Features:

- The main temple of Jagannath is constructed in **Kalinga/Oriya architecture**
- It is a distinct sub-style of **Nagara architectural style**.

- The temple complex is enclosed within two concentric walls: The **KurumaBheda** (Inner wall) and The **MeghnadPachira** (Wall)
- **The Nilachakra:** The Blue wheel perched on top of the temple is made of eight metals or **asta dhatu**.
- **Patitapabana:** The flag flows in the opposite direction of the wind and is changed every day at sunset.
- **The Mahaprasad:** The offering to the Lord is prepared on **fire lit** by wood charcoal.
- Rice with some vegetables and cereals are put in earthen pots and placed on the fire one on top of the other.
- **The ArunaStambha:** The 33 feet **monolith structure pillar** was originally located at the Sun Temple, Konark.

STATE-OF-ART AIRPORT WILL SHOWCASE THE CULTURAL HERITAGE OF TRIPURA

Prime Minister inaugurates newly integrated terminal building of the **Maharaja Bir Bikram (MBB) Airport** at Agartala.

Heritage associated with Airport

- The **dynamic and iconic form of the building is derived** from the hilly terrain of the State of **Tripura**.
- **Bamboo architecture** is represented in the **facade** of the terminal building by way of a **floral jaali** pattern depicting the forests and greens of the region.
- A **jali** is the term for a **perforated stone or latticed screen**, usually with an ornamental pattern constructed through the **use of calligraphy and geometry**.
- This form of **architectural decoration** is common in **Hindu temple architecture, Indo-Islamic Architecture** and more generally in Islamic Architecture.

- Local **tribal stone** sculptures of the **Unakoti Hills** and **local bamboo handicrafts** have been extensively used in the interiors.

Maharaja Bir Bikram

- **Maharaja Bir Bikram Kishore Manikya Debbarman Bahadur** was a king of **Tripura State**.
- Born: 19th August of 1908 in Tripura.
- He reigned over Tripura **1923-1947**.
- He is known as the "**Modern Architect of Tripura**".
- He was the **first ruler who visited Europe and America** from 1931 to 1939.
- He was considered **one of the pioneers for the land reforms**.
- He died at a **very young** age of 39 in 1947.

CHENNAI'S INSTITUTE OF MATHEMATICAL SCIENCES TURNS 60

- Institute of Mathematical Sciences was **founded** in Chennai **by Alladi Ramakrishnan** in 1962.
- Nobel Laureate **Subrahmanyam Chandrasekhar** gave the **inaugural lecture**.
- It is **funded** mainly **by the Department of Atomic Energy**.
- It **developed Kabru supercomputer**, which is listed in the Top 500 list of the world's most powerful computers.

HC's LANGUAGE IS ENGLISH, SPEAK ONLY ENGLISH: CJ

A Division Bench of the Gujarat High Court has asked to speak only in English as that was the language in the higher judiciary.

Languages in courts of India:

- **Hindi and English** are the **official languages** of the **Government of India**.

Supreme Court:

- As per **Article 348**, the Supreme Court of India uses "**English**" as its **working language until the parliament** by law specifically **provides** some **other language**.
- After the enactment of **Article 349**, the **parliament** has been **restricted to enact** any kind of **provision regarding the change** in language.

High Courts:

- As per **Article 348 (1)**, the language used in the **High Courts** shall be **English**.
- **Article 348 (2)** states that the **governor can authorise** the **use of Hindi** or any **other language** with the **consent of the President** for the proceedings of the High Court.

- As per further provisions, the **judgments** shall be **pronounced in the English language only**.
- In the case of **judgments, orders** or decree is **passed in Hindi** or any other language, it shall be **accompanied with English translation** of the same.

Subordinate Courts:

- **Section 272** of the **Code of Criminal Procedure 1973**, states that the **State government** shall **determine** the **language of all courts other than the High Courts**.
- Broadly, it means that the language used in the district courts shall be in the regional language as the state government directs.
- The **state government** has the **power to invoke any language** by promulgating an act if it feels necessary for the litigants.

Arguments against the use of English:

Pleaders are not well versed in English:

- Most of the **pleaders** practicing, along with **staff and the courtroom clerks** in the subordinate courts are **not well acquainted with English** as they are having their regional languages as their mother tongue.

Most often parties are acquainted with regional languages:

- The **parties** are not acquainted with English as they **use their regional languages**.
- In Southern Indian states, the parties are even not familiar with the Hindi language.
- The **recording of evidence** is also done in the **regional language**.

Article 19 (Freedom of speech and expression):

- The litigant has the **fundamental right** to understand and participate in the courtroom proceedings, **under Article 19 and Article 21**.
- The litigant has the **right to speak in the language he/she understands** before the magistrate.
- Similarly, “**right to justice**” is also recognised **under Article 21 of the Constitution**.
- The constitution has conferred the right to justice on the litigant which further encompasses that he shall have the right to understand the whole proceedings and the judgment delivered.

Inclusive system:

- Subordinate courts are the place which is occupied by **non-English speaking lawyers**.
- The **inclusive system** where regional language is used **provides such local lawyers** to have their own **identity and space**.

Arguments in favour:

Homogeneity:

- In order to bring **uniformity in the whole judicial system**, English should be allowed to be used in the courts subordinate to the High courts in respective states.

Vernacular languages monopolies the system in vernacular courts:

- The regional language creates a monopoly in the system **hampering the right of lawyers** from **other states** willing to settle and practice.
- The use of regional language in the subordinate courts shall **deprive the candidates** coming from outside the state to **participate in the judicial service examination**.

CABINET CLEARS ₹12K-CR GREEN ENERGY CORRIDOR

Recently, the Cabinet Committee on Economic Affairs approved the Green Energy Corridor (GEC) Phase-II for Intra-State Transmission System (ISTS).

Highlights of the Scheme:

- It will focus on addition of 10,750 circuit kilometres of **transmission lines** and 27,500 **Mega Volt-Amperes (MVA)** transformation capacity of substations.

- The scheme will have **central financial assistance (CFA)** at 33% of the project cost of Rs 3,970 crore.
- CFA will help in offsetting the **Intra-State transmission charges** and thus keep the power costs down.
- It will also focus on the creation of **transmission systems**.
- This scheme is in addition to GEC-Phase-I.

Features:

- The target of the project is to install 9700 circuit kilometres **transmission lines** and substations of a total capacity of approx. 22600 MVA.
- It will evacuate over 20,000 MW of large-scale **renewable power** and improvement of the grid in the implementing states.

Significance:

- It will help in achieving the target of 450 Gw **installed RE capacity** by 2030.
- It will also contribute to **long term energy security** of the country and promote ecologically **sustainable growth** by reducing carbon footprint.
- It will generate **employment opportunities** for both skilled and unskilled personnel in power and other related sectors.

GEC-Phase-I:

- For evacuation of large-scale **renewable energy**, ISTS project was sanctioned in 2015-16.

- **Aim:** Synchronizing electricity produced from renewable sources with conventional power stations in the grid.
- **Implemented in eight renewable-rich states:** Tamil Nadu, Rajasthan, Karnataka, Andhra Pradesh, Maharashtra, Gujarat, Himachal Pradesh, and Madhya Pradesh.
- The project is being implemented by respective **State Transmission Utilities (STUs)** allocating the work through a competitive **bidding process**.

Funding Mechanism:

- It consists of **40% Government of India Grant, 20% state equity** and **40% loan from Germany**.

Central Grant

It is disbursed in two instalments to the **State Transmission Utilities:**

- 70% advance on the award of contract.
- Balance 30% after successful commissioning and performance testing.

CABINET APPROVES MOUs WITH NEPAL, TURKMENISTAN ON INFRA, DISASTER MANAGEMENT

Recently, MoU have been signed between India-Spain on Customs and India-Turkmenistan on Disaster Management.

India-Spain

- Relations between **India and Spain** have been cordial since the establishment of diplomatic relations in 1956.

Economic and Commercial Relations

- Spain is India **8th** largest trade partner in Europe.
- India top **exports** to Spain are textiles, organic chemicals, iron & steel, seafood, automobiles and leather.
- India major **imports** are mechanical appliances, electrical machinery, chemicals, plastic and mineral fuels.

Defence

- India Procure 56 **C295 aircraft** from Airbus Spain, 40 of which will be 'Made in India' in collaboration with Tata Advanced Systems.

India – Turkmenistan relations

- **Turkmenistan**, one of the Republics of the former USSR, was proclaimed as an independent State on 27 October 1991.
- Turkmen Gate was built in Delhi in memory of great Turkmen Saint **Shams-ul-Arifeen Shan Turkmen Bayabani**, who is **believed to have lived in India during 13th century**.

Infrastructure

- **TAPI (Turkmenistan–Afghanistan–Pakistan– India)** gas pipeline project remains active since the TAPI Summit was held in Ashgabat in December 2010.
- India was invited to join the '**Ashgabat Agreement**' which envisages establishment of an International Transport and Transit

Corridor between the Governments of Iran, Oman, Turkmenistan and Uzbekistan.

Trade

- Major items of **import** from India include electronic and electrical items, machinery and woven apparel and pharmaceuticals, frozen meat and tyres.
- **Exports** to India comprises of raw hides and inorganic chemicals.

Cultural relations

- Central Asia first Yoga and Traditional Medicine Centre was inaugurated by India in Ashgabat in July 2015.

Education

- Hindi language is being taught to about 50 students each year at the **Azadi Institute of world languages** in Ashgabat.
- An **Ayurveda Therapist** is conducting classes in Turkmen State Medical University.

PM MODI'S SECURITY LAPSE: SC ORDERS PROTECTION OF TRAVEL RECORDS IN PUNJAB

The recent lapse of security causing Prime Minister's cavalcade stranded in Punjab, has put Punjab police under serious scrutiny.

How is the Prime Minister's security planned?

- Planning of the PM's security during any visit is an elaborate exercise that involves both **central agencies and state police forces**.
- The **Special Protection Group (SPG)** handles Prime Minister's security based on the guidelines laid down in SPG's '**Blue Book**'.

- The instructions in the 'Blue Book' are issued by the **Ministry of Home Affairs**.
- It states that the overall responsibility for ensuring the safety of the PM rests with the state government and responsibility for providing proximate security rests with SPG.
- Three days before any planned visit, SPG holds a mandatory **Advance Security Liaison (ASL)** with everyone involved in securing the event.
- It includes SPG officials, Intelligence Bureau (IB) officials in the state concerned, state police officials, and the district magistrate concerned.

- All security arrangements are made, based on a the **prepared ASL report**, after getting signed by the officials.
- The report consists of PM's **mode of travel, security of the venue, weather reports etc.**
- A **contingency plan** is also made in advance, in case there is any change in plans.

SPG?

- Special Protection Group (SPG) is entrusted with the task of providing **proximate security** to the Prime Minister of India, former Prime Minister and their immediate family members.
- In 2019, the law was amended and SPG protection is granted only to the prime minister of India.
- The agency was formed in **1988** by an **Act of the Parliament of India**.
- The SPG was started in 1985 in the wake of the killing of PM Indira Gandhi in 1984.
- SPG works on the motto of **Zero Error** and **Culture of Excellence**.
- The spirit behind the SPG motto is "**Shauryam Samarpanam Surakshanam**" (i.e., bravery, devotion and protection).
- **Headquarters: Dwarka** in southwest Delhi.

Command and control

- The general superintendence, direction and control of the SPG is exercised by the **Government of India**.
- Head of the force: **Director**
- He formally serves as the **Joint Secretary (Security) in the Cabinet Secretariat**.
- He is responsible for the **command and supervision of the force**.
- Recruits are drawn from enlisted ranks of the **Central Armed Police Forces** and **Railway Protection Force**.
- The personnel may include both **men and women** from Border Security Force, Central Reserve Police Force, Central Industrial Security Force, the Indo-Tibetan Border Police.
- The SPG is highly trained in **physical efficiency, marksmanship, combat** and proximate protection tactics.
- They are assisted by all central and state agencies to ensure fool proof security.

Various levels of protection?

- There are largely **six types** of security covers: **X, Y, Y plus, Z, Z plus** and **SPG**.
- The **SPG** is meant **only for the PM** and his **immediate family**.
- The other categories can be **provided to anyone** about whom the Centre or state governments have inputs about **facing a threat**.

RPF SAVED 601 LIVES IN 2021 ON RAILWAY PREMISES

In the year 2021, Railway Protection Force (RPF) has saved the lives of 601 persons under **MISSION JEEWAN RAKSHA**.

- **Aim of Mission:** To save persons in different circumstances from coming under the wheels of the railways.
- RPF is a special force that is engaged in the service of providing security to the passengers and the property of the railway.

HAL's INTERMEDIATE JET TRAINER COMPLETES CRUCIAL SIX-TURN SPINS

Intermediate Jet Trainer (IJT) has successfully demonstrated the capability to carry out six turn spins.

Intermediate Jet Trainer (IJT)

- It is designed and developed by the **Hindustan Aeronautics Limited (HAL)** for **stage-II training of Indian Air Force (IAF) pilots**.
- It is also **known as HJT-36** and going to **replace the Kirans** of the IAF fleet.

- IJT program was **halted in 2016** and flight testing **resumed in April 2019**.
- **Max Speed / Mach No:** 750 Km/h / 0.75
- **Mach no.**- Mach number is the **ratio of the velocity of a fluid to the velocity of sound in that fluid**.
- **Roles** - Pilot Training, General flying, Navigation formation flying, Instrument & cloud flying, Basic air to ground & air to air weapon aiming, Tactical flying, Night flying.

GOVT HIKES POLL EXPENDITURE LIMIT FOR CANDIDATES CONTESTING LOK SABHA, ASSEMBLY POLLS

Recently, the government hikes poll expenditure limit for candidates contesting Lok Sabha elections.

- The expenditure limit was increased by amending the **Conduct of Election Rules of 1961** contained in the **Representation of the People Act, 1951**.
- The expenditure limit for candidates has been raised to Rs 95 lakhs from 75 lakhs **for the Lok Sabha elections**.
- For Assembly polls, the amount has been raised to **Rs 40 lakhs from 28 lakhs**.
- **Election Commission** had formed a committee to study cost factors and

subsequently make suitable **recommendations**.

- Suggestions were invited by the committee from **political parties, chief electoral officers, and election observers**.
- For **Assembly Elections**, the revised expenditure limit for candidates is **Rs 40 lakh for big states**, and candidates in smaller states can spend a **maximum of Rs 28 lakh**.
- The Commission has accepted recommendations of the Committee and decided to enhance the existing election expenditure limit for candidates

HYDERABAD GETS INDIA'S FIRST OPEN ROCK MUSEUM, 35 VARIETIES OF ROCKS ON DISPLAY

Recently, India's first unique Rock Museum was unveiled at Hyderabad by scientists at the CSIR-National Geophysical Research Institute (NGRI).

- **Aim:** To educate and enlighten the masses about several lesser-known facts about rocks.

- It displays around **35** different types of rocks from different parts of India with ages ranging from **3.3 billion years** to around **55 million years** of the Earth's history.
- These rocks also represent the deepest part of the earth up to 175 kilometres of distance from the **surface of the earth**.

ICMR APPROVES INDIA-MADE KIT TO DETECT OMICRON

Recently, the Indian Council of Medical Research (ICMR) approved Omisure.

Omisure:

- It is **first ever indigenously developed RT-PCR (reverse transcription-polymerase chain reaction)** kit against omicron,

manufactured by Tata Medical and Diagnostics, Mumbai.

- Omisure will be used to confirm the Omicron in patients with its **S-Gene Target Failure (SGTF) strategy**.
- Normal RT-PCR tests could not capture Omicron. The SGTF strategy is a specialized type of RTPCR test to detect Omicron variant.

INDIA TO INTRODUCE CHIP-BASED ePASSPORTS. HOW DOES IT WORK?

India is set to issue next-gen e-Passports for citizens applying for new passports or renewing their old ones.

Genesis:

- Currently, passports issued to Indian citizens are **printed on booklets**.
- The government wants to upgrade them in line with international standards set by the International Civil Aviation Organization (ICAO).
- The passports of all countries are obliged to follow the UN's **International Civil Aviation Organisation (ICAO)** standard.
- In 2016, ICAO made a rule that newly issued passports must be **Machine-Readable Travel Documents (MRTD)**.
- The current Indian passport falls under the category of machine-readable passports.
- The government wants to introduce two processes from ICAO standards:
- E-passport

- Introduction of fully digital passports that can be carried on mobile phones.

What is an ePassport?

- An ePassport incorporates an electronic chip with a **biometric identifier**.

Features of ePassport:

- It will be based on **biometric data** and ensure smooth passage through **immigration posts** globally.
- **Software developed used in new passport by:** IIT Kanpur and National Informatics Centre (NIC)
- It will have a **security chip** embedded on the passport with personal data, including the biographical information of the holder.
- It will also have a **digital signature** unique to each country that can be verified using a certificate.

Countries with ePassports:

- Currently over 100 states and organisations like the **United Nations** issue ePassports.
- Countries like Zimbabwe, Malawi, Ireland, Pakistan, Nepal and Bangladesh have moved to implement ePassports.

Benefits:

- They facilitate **easier international travel** and speed up processing at immigration counters.
- With biometric data, the **security of the passport is higher** than the traditional paper booklet.

- The **forgery of the passport** can also be controlled.
- The ePassports will enable a smoother transition through **immigration**.
- Indian passport ranks 90th globally in terms of its strength as per the **Henley Passport Index 2021**.
- Thus, the increased security can allow the acceptance into more countries without a prior visa.
- **Unauthorized data transfer** will be blocked through radio-frequency identification.
- The decision will make passport access easier for the youth migrating abroad.

‘BY USING SUGARCANE JUICE TO MAKE BIOFUELS, INDIA CAN MAKE SUGAR MORE PRODUCTIVE AND SUSTAINABLE

Recently, a study has shown that surplus sugarcane should be turned into biofuel for sustainability.

Sugarcane:

- Sugarcane is a **perennial grass**.
- **Minimum Support Price (MSP)** of sugar is fixed after **taking into account the Fair & Remunerative Price (FRP)** of sugarcane and minimum conversion cost of the most efficient mills.

Zones and Regions of Production:

- It is **indigenous to the warm temperate to tropical climates** of South and Southeast Asia, although it is now grown in more than 100 different countries around the world.
- Broadly there are **two distinct agro-climatic regions** of sugarcane cultivation in India, viz., **tropical and subtropical**.
- **Five agro-climatic zones** have been identified mainly for the purpose of varietal

development: **North Western Zone, North Central Zone, North Eastern Zone, Peninsular Zone, Coastal Zone.**

- **Brazil** is the world's largest producer of sugarcane.
- **India** is the **second-largest producer** in the world with 18.7% of world's production.

Climatic requirement:

- Sugarcane requires **different temperature** for different critical stages.
- The different critical stages are **germination, tillering, early growth, active growth and elongation**.
- Optimum temperature for sprouting (germination) of stem cuttings is 32° to 38°c.
- Temperatures above 38° reduce the rate of photosynthesis and increase respiration.
- For ripening, however, relatively low temperatures in the range of 12° to 14° are desirable.

Environmental Impact of Sugarcane:

- Sugarcane is a **water intensive crop** that **consumes both surface water and groundwater**.
- The groundwater gets replenished once the rains come, but this pattern is growing more unpredictable with climate change now.
- Sugarcane production often **pollutes freshwater ecosystems** with silt and fertilizers washed from farms, as well as plant matter and chemical sludge from mills.
- **Soil acidification** is a common problem of soils under sugarcane cropping mainly due to the use of fertilizers.
- **Carbon content change** in soils under long-term sugarcane production.

Nutritional Value of Sugarcane:

- Cane sugar is **not rich in vitamins or minerals**.
- An excessive consumption of sugar often leads to health challenges alongside a deep lack of nutrition.

Economic worries of sugar:

- As in India and Brazil, many countries developed **entrenched interests in growing sugar**.
- This led to **sugarcane surplus**.
- As sugarcane offers **no health benefits** the countries face the dilemma on **how to use such sugar surpluses** while maintaining revenues for producers and avoiding declining prices.

Potential Alternatives of Sugarcane:

- **Biofuels derived from sugar** can be used in the transportation sector as an **alternative to fossil fuels**.
- Brazil, which grows a lot of sugar, already has a biofuel industry based on sugarcane.
- India has the potential to use **sugarcane juice as biofuel** for more productivity and sustainability.
- India has a mandate saying that its transport sector should be at least **20% comprised of biofuels**.

PNGRB FLOATS BIDS FOR CITY GAS NETWORKS

The Petroleum and Natural Gas Regulatory Board invited bids for city gas distribution (CGD) network in five geographical areas (GAs) covering 27 districts across Uttar Pradesh, Bihar, Jharkhand, Chhattisgarh and West Bengal.

City gas networks

- After completion of bid **88 % of the country's area** will be authorised for **development of CGD Network** to provide **access of natural gas** to 98 % of country's population.

- Till march 2021, India had a total of **78.65 lakh piped natural gas connections** and **3,094 compressed natural gas stations**.
- At present, there are **228 Gas authorised by the regulator across 27 States and union territories** covering around **53 % of the country's geographical area** and **70 % of its population**.

City Gas Distribution (CGD) network

- **Under the Petroleum and Natural Gas Regulatory Board (PNGRB) Act**

2006, PNGRB grants the **authorization to the entities** for developing a City Gas Distribution (CGD) network (including PNG network) in a **specified Geographical Area (GA)** of the country.

- CGD sector **has four** distinct segments
- **Compressed Natural Gas (CNG)** predominantly used as auto-fuel.
- **Piped Natural Gas (PNG)** used in domestic, commercial and Industrial segments.

Petroleum and Natural Gas Regulatory Board (PNGRB)

- It is a **statutory body**, constituted under the **act of Parliament of India**, namely Petroleum and Natural Gas Regulatory Board Act, 2006.
- Its **primary functions** include regulation of **refining, transportation, distribution, storage, marketing, supply and sale** of petroleum products and natural gas.
- **Composition of PNGRB**: A Chairperson, a Member (Legal) and 3 other members nominated by chairperson which decides on disputes arising among downstream companies or with outsiders.
- The Appellate Tribunal established under section 110 of the **Electricity Act, 2003** is the Appellate Tribunal for PNGRB.

UNION JAL SHAKTI MINISTER ANNOUNCES 3RD NATIONAL WATER AWARDS

Recently, the Union Minister of Jal Shakti announced 3rd National Water Awards-2020.

- India has more than 18% of the world's population but has only 4% of world's renewable water resources.

National Water Awards (NWA):

- NWA was launched by Jal Shakti Ministry in 2018.
- NWA recognizes and encourage efforts made towards attaining the vision of a '**Jal Samridh Bharat**'.
- NWA is given to States, Districts, individuals, organizations, etc. across the India, in 11 different categories.

GOVT SELECTS TCS TO DRIVE NEXT PHASE OF PASSPORT SEVA PROGRAM

Recently, Ministry of External Affairs (MEA) has chosen Tata Consultancy Services (TCS) to implement the Passport Seva Program.

- **Launched**: 2008
- **Aim**: Transforming the delivery of passport-related services by digitising the processes

and setting global benchmarks in timeliness, transparency, and reliability.

- It provides passport services through the Central Passport Organization (CPO) and its network of Passport Offices, Passport Seva Kendras (PSKs); and Post Office Passport Seva Kendras (POPSKs).

MAHARASHTRA, TAMIL NADU AMONG 5 INDIAN STATES WITH DIRTIEST COAL POWER STATIONS: CSE ANALYSIS

The analysis by the Centre for Science and Environment (CSE), have shown that coal stations run by state governments will not be able to meet emission deadlines in 2022.

- Coal plants emit pollutants like **sulphur dioxide (SO₂)** and **oxides of nitrogen (NO_x)**.

About Coal:

- Coal is formed beneath the earth, due to the suppression of biological materials, over millions of years.
- Depending on the degrees of compression, Coal is found in a variety of forms.

Coal In India:

- In India, the coal is found in 2 rock sequences, namely **Gondwana Deposits** and **Tertiary Deposits**.
- Around **80% of Indian coal deposits contain bituminous type**, which is non-coking grade.
 - **Gondwana coals** occur in **Damodar Valley** (Jharkhand-Bengal coal belt).
 - **Jharia (Jharkhand)** is the **largest Indian coalfield**.
 - **Tertiary coals** occur in Assam, Arunachal Pradesh, Meghalaya and Nagaland.
 - Apart from it, **brown coal or lignite** occur in the coastal areas of Tamil Nadu, Puducherry, Gujarat and Jammu and Kashmir.

About Sulphur dioxide (SO₂) pollution:

- Sulphur dioxide (SO₂) gas is **emitted by the burning of fossil fuels, including coal, gas and oil**.
- **Mostly, the thermal power plants** (coal plants) dominate SO₂ emissions.

- SO₂ is also a **natural by-product of volcanic eruptions**.

Effects of Sulphur dioxide (SO₂) pollution:

- It can create **secondary pollutants** like **sulfate aerosols, particulate matter, and acid rains**.
- It affects the **heart and lungs**, making breathing more difficult.
- Can lead to formation of **haze and smog**, impacting visibility.

SO₂ **converts to sulfuric acid aerosols** that **block incoming solar radiation** and contribute to ozone destruction.

- The emission norms were set by the **Ministry of Environment, Forest and Climate Change (MoEF & CC) in 2015**.

Findings of the analysis:

- **35 per cent** of the total coal power will **fail to meet** their respective **deadlines** to meet the new emission norms.
 - A majority of the **coal thermal power** capacity that is **likely to meet** the norms **belongs to the central sector followed by the private sector**.
- The major defaulters belong to the following states: **Maharashtra, Tamil Nadu, Madhya Pradesh, Chhattisgarh and Andhra Pradesh**.
- **Except for Assam**, none of the other states among these 17 will 100 per cent comply with the stipulated deadlines.

Categorization of Power Plants:

- The country's 596 coal thermal power plant units have been put under **three categories: A, B and C**.

- **61 per cent** coal thermal power capacity in **Category A**, **35 per cent** capacity in **Category B** and **32 per cent** capacity in **Category C** will **not be able to meet deadlines** in 2022.
- The **deadline** for compliance of **Category C** powerplants is **2024**.

Pollution from coal power plants:

- Major pollutants from coal-fired power plants are oxides of **nitrogen (NO_x)**, **sulphur dioxide (SO₂)** and **particulate matter (PM)**.

PRAVASI BHARTIYA DIWAS BEING CELEBRATED; VICE PRESIDENT & PM GREET INDIAN DIASPORA ON THE OCCASION

Recently, the Prime Minister has greeted the Indian diaspora on Pravasi Bharatiya Diwas.

Pravasi Bhartiya Divas (PBD):

- PBD is celebrated once every two years on January 9.
- **Conducted by:** Ministry of External Affairs.
- **Aim:** To strengthen the engagement of the overseas Indian community with the Government of India and reconnect them with their roots.

16th PBD Convention

- It was held in New Delhi in 2021
- **Theme:** Contributing to Atmanirbhar Bharat

History of PBD:

- The first PBD was organised on January 9, 2003.
- On January 9 **Mahatma Gandhi** had returned to India from **South Africa**, in 1915.
- After his return, he led the country's **freedom struggle** which changed the lives of Indians.

- Sixteen PBDs have been held earlier in various places of India so far.

Significance:

- It is celebrated to mark the contribution of the Indians residing abroad in the development of the land of their origin.

Pravasi Bharatiya Samman Award:

- It is the highest honour conferred on a **Non-Resident Indian**, Person of Indian Origin, an **organisation or institution** established and run by Non-Resident Indians or Persons of Indian Origin.

It is awarded for significant contribution in

- Understanding of India abroad
- Support India's causes and concerns in a tangible way
- Community work abroad
- Welfare of local Indian community
- Philanthropic and charitable work.

Bharat Ko Janiye Quiz:

- **Launched in:** 2015-16

- **Aim:** To strengthen the engagement with young overseas Indians and encourage them to know more about their country of origin.

- The first edition of the "**Bharat ko Janiye**" Quiz was organized in 2015-16.
- Second edition in 2018-19.
- The third edition was organised in 2020.

PM ANNOUNCES 26TH DECEMBER AS 'VEER BAAL DIWAS' TO MARK MARTYRDOM OF SAHIBZADA ZORAWAR SINGH JI AND SAHIBZADA FATEH SINGH JI

Recently, the prime minister announced that 26th December shall be observed as **Veer Baal Diwas**.

Veer Baal Diwas (26th December):

- It is observed to remember the martyrdom of **Sahibzada Zorawar Singh Ji** (6 years of age), and **Sahibzada Fateh Singh Ji** (9 years of age).
- They were the kids of **Guru Gobind Singh (10th Sikh guru)**.
- On 26th December 1705, on orders of the **Mughal emperor Aurangzeb**, both kids were sealed alive in the wall, for not accepting Islam.

Sahibzada Zorawar Singhji & Fateh Singh

- **Both** were cared for by **their grandmother, Mata Gujari**, until their martyrdom.
- Fateh Singh and Zorawar Singh were **bricked up alive** within a wall.
 - Both of them **refused to accept the Islam**.
 - **Wazir Khan** sentenced them to death.
- **Both Died:** 26 December 1705 Sirhind.

Guru Gobind Singh

- He was **born as Gobind Rai** on 22 December 1666 in Patna Sahib.
- He was the **tenth Sikh Guru, a spiritual master, warrior, poet and philosopher**.

- He was formally installed as the **leader of the Sikhs at the age of nine, a final human Sikh Guru**.
- His four sons died during his lifetime – **two in battle, two executed by the Mughal army**.
- He founded the Sikh warrior community called **Khalsa in 1699**.
 - **Khalsa** refers to both a community that considers **Sikhism as its faith** as well as a **special group of initiated Sikhs**.
- He also introduced the **Five Ks**, the five articles of faith that Khalsa Sikhs wear at all times.
 - **Five Ks- Kesh, Kara, Kanh, Kachera, Kripan**.
- He is credited with the **Dasam Granth whose hymns are a sacred part of Sikh prayers and Khalsa rituals**.
- He is also credited as the one who finalized and enshrined the **Guru Granth Sahib as Sikhism's primary scripture and eternal Guru**.
- He also announced a **code of discipline for Khalsa warriors**.
- He introduced ideas that **indirectly challenged the discriminatory taxes** imposed by the Mughal authorities.
- He led **fourteen wars** but never **took captives nor damaged anyone's place of worship**.
- **Died:** 7 October 1708, Takhat Sachkhand Sri Hazur Abchal Nagar Sahib, Nanded.

LAL BHADUR SHASTRI DEATH ANNIVERSARY 2022: INSPIRING QUOTES

On 11th January 1966, India's second Prime Minister Lal Bahadur Shastri had passed away.

Lal Bahadur Shastri (1904-66):

- He was a follower of Mahatma Gandhi and participated in the **Non-cooperation movement**(the 1920s), Salt Satyagraha(1930), supported Individual Satyagraha(1940), and Quit India movement(1940s).
- He had **recommended using "water-jets" instead of lathis** to disperse the mob.
- He also **served as the Minister for Railways and Minister for Home** under the Union Cabinet, headed by PM Nehru(1950-60s).
- After the passing away of Nehru Ji in 1964, he became **India's 2nd Prime Minister**.
- He was the **first person to be posthumously awarded Bharat Ratna** in 1966.
- He was **instrumental in appointing the Committee on Prevention of Corruption under the Chairmanship of K. Santhanam**.
- He **translated autobiography of Marie Curie into Hindi** language.

Contributions as PM of India (1964-66):

Internal:

India Kagzi Lemons will soon get Geographical Indication (GI) tag.

- During his time, due to rigorous **Madras anti-Hindi agitations**(1965), He assured that English will continue to be used as the official language.
- In response to food insecurity and international pressure, he appealed to Indians to skip a meal a week, called "**Shastri Vrat**".
- He promoted the **White Revolution and the Green Revolution**(1965).
 - Institutions established during his prime ministership include the **National Dairy Development Board (NDDB)** and the **Food Corporation of India (FCI)**.

Foreign:

- In 1964, he **signed an agreement with Sri Lankan PM** for more than 3 lakh **Indian Tamils**.
- In 1965 he **visited Burma** and re-established cordial relations with the **military government** of Burma.
- During the **1965 India-Pakistan war**, he gave the slogan of '**Jai Jawan Jai Kisan**'.
 - In 1965 with a **United Nations-mandated ceasefire**, the Indo-Pak war ended.
 - In 1965, he and Ayub Khan(Pakistani PM) signed the **Tashkent Declaration** for peace and the end of the war.

INDI'S 'KAGZI LEMONS' MONTHS AWAY FROM GETTING GI TAG

- It is grown in the northern plains of **Karnataka** especially in the Vijayapura district since 1900.

- However, the ones cultivated in India are known for their unique texture and high acidic value.

- The **ascorbic acid** content is the highest in these varieties.

IN A FIRST, CENTRE SURVEYS NEARLY 18 LAKH ACRES OF DEFENCE LAND TO SHIELD IT FROM ENCROACHMENT

The Survey of defence land in India, which started from October 2018, was recently completed.

- The survey of 1.61 lakh acres of defense land inside cantonments and 16.17 lakh acres outside cantonments was done.

Highlights:

- Ministry of Defence owns large tracts of land measuring **17.99 lakh acres out of which 1.61 lakh acres** is situated within the **62 notified Cantonments**.
- Modern survey technologies like **Electronic Total Station (ETS)** and **Differential Global Positioning System (DGPS)** were used in the survey.

- **ETS:** It is an electronic instrument used in modern surveying and building construction that uses electronic transit theodolite in conjunction with an electronic distance meter.
- **DGPS:** It is an enhancement to the Global Positioning System (GPS) which provides improved location accuracy.
- To achieve better visualization of defense land in a hilly area 3D modelling techniques were used by utilizing **Digital Elevation Model**.
- As a part of the Survey, a project for a real-time change detection system based on the Time series Satellite imagery for detection of encroachments on defense land has been initiated.

PM NARENDRA MODI PAYS TRIBUTE TO SWAMI VIVEKANANDA ON BIRTH ANNIVERSARY

The birth anniversary of Swami Vivekananda - **January 12**- is observed as **National Youth Day**.

Swami Vivekananda

Early Life

- Swami Vivekananda was a **scholar, spiritual leader and a philosopher**.
- He was born as **Narendranath Datta** on January 12, 1863, in Kolkata, West Bengal.
- He was always inclined towards **spirituality**.

- He **practised meditation** from a very early age and also joined the **Brahmo Samaj** movement for a certain period.
- **Society of Brahma** is dedicated to eliminating child marriage and illiteracy.
- He had acquired a vast knowledge of different subjects, especially **Western philosophy and history**.
- He was the **chief disciple** of 19th century mystic and yogi Ramakrishna Paramhansa.
- He founded the **Ramakrishna Math**, a monastic order based on his guru's teachings in Kolkata.

- He also started a worldwide **spiritual movement** known as the **Ramakrishna Mission** based on the ancient Hindu philosophy of Vedanta.
- After the death of his **guru Ramakrishna Paramahansa**, he gave up on all of his worldly pleasures and became a monk.
- He became one of the most **intellectual philosophers** of the world, to have known and taught life through the art of love and knowledge of the soul.

Contributions:

- He was credited for **introducing Indian philosophies of Vedanta and Yoga to the western world.**
- His philosophies give a **better perception** of the world.
- He played a major role in the **upliftment of the society** by educating women and lower castes.
- He also highlighted the **importance of unity** among all the religions.
- He had a very strong belief that **youth can transform the fate of India** through their hard work, dedication and spiritual power.

- His **theory of optimism** was to replace the weak thoughts with the help of yoga and meditation.
- He is credited with contributing to a **revival of modern Hinduism and inspiring nationalist consciousness** during colonial rule.
- He is best known for his famous **1893 speech** where he introduced Hinduism to the Western world in Chicago.
- **Universal Brotherhood Day** is observed on 11 September to commemorate his historic speech in Chicago.
- He wrote the books named '**Raja Yoga**', '**Jnana Yoga**', and '**Karma Yoga**'.

Recognitions:

- Subhas Chandra Bose called Vivekananda "**the maker of modern India**".
- Mahatma Gandhi credited Vivekananda's with increasing his "love for his country a thousandfold".
- In 1985, the Government of India declared Swami Vivekananda's birthday, as **National Youth Day** in honour of the great philosopher and monk.

WORLD HINDI DAY 2022: DATE, SIGNIFICANCE AND INSPIRATIONAL QUOTES

Recently on **January 10**, world Hindi day was celebrated.

World Hindi Day (Vishwa Hindi Diwas)

- **Vishwa Hindi Divas** commemorates the anniversary of the first World Hindi Conference held in Nagpur on January 10, 1975.
- World Hindi Day is different from **Hindi Divas** which is celebrated on **September 14** every year.

- September 14 also marks the birthday of **Beohar Rajendra Sinha**, who is also regarded as the main person behind making Hindi the official language of India.

Hindi Language:

- Hindi is an **Indo-Aryan language** spoken chiefly in the **Northern part of India.**
- Spoken Hindi has 4 varieties: **High Hindi, Nagari Hindi, Literary Hindi, and standard Hindi.**

- The word Hindi came from a Persian word '**Hind**', which means the land of the Indus River.

- Hindi is the **third most spoken language** in the world after English and Mandarin (Chinese).
- Hindi became the **official language of India** in 1965.

ERUMELY PETTA THULLAL HELD WITH RITUALISTIC FERVOUR

Recently, Petta Thullal was held at Erumely, Kerala.

Petta Thullal:

- Petta thullal is also known as **Petta Kettu**.
- It is the **ritualistic sacred dance** marking the last leg of the **annual Sabarimala pilgrimage season**.
- It is held annually at **Erumely** in the district of **Kottayam, Kerala**.
- It is performed during the **Makaravilakku period** (November, December and January) among thousands of devotees.

- It depicts the joyfulness of people over the slaying of Mahishi by **Lord Ayyappa**.
- Two groups participate in the thullal, one from **Ambalappuzha** and other from **Aalangadu**.
 - **The Ambalappuzh:** They start the ritualistic dance after **sighting the kite** in the skies around noon.
 - **Aalangadu:** The ceremonial dance by the Alangad team begins in the afternoon after **sighting the star** in the daylight sky.

GOVT ASKS BARC TO RELEASE TRP FOR NEWS CHANNELS UNDER NEW STRUCTURE

Recently, the ministry of information and broadcasting asked the Broadcast Audience Research Council (BARC) responsible for measuring TV viewership in India to release Television Rating Points (TRP) for news channels.

Target Rating Point (TRP)

- It is the metric used by the **marketing and advertising agencies** to evaluate this viewership.
- It is the **tool** to judge which programmes are watched the most and to index the viewers' choices.

- It shows how many times people are watching a **channel** or a **particular programme**.

TRP calculation

- TRP is calculated by Indian agency the Broadcast Audience Research Council using **BAR-O-meters**.
- The BARC releases weekly TRP results **every Thursday** ranking all TV channels and TV programmes.

BAR-O-meters & People meters

- It surveys in over **45,000** impanelled households.
- In this way, some thousand viewers are **surveyed** in the form of justice and sampling.
- **BAR-O-meters** is installed in some places or set in selected homes to calculate the TRP.
- Through this meter the information of TV channel or programme for one minute is carried out by the Indian Television Audience measurement (INTAM) monitoring team. This method is called the **People meters**.
- BARC currently has 22,000 Bar-o-meters installed across the country and is mandated to scale that up by 10,000 annually to reach

50,000 metered homes by **year four of operations**.

Picture matching

- Here the people meter **records a small portion of the picture that is being watched** on the TV.
- This data is collected from a set of homes in the form of **pictures** and later on is analysed to calculate the TRPs.

Broadcast Audience Research Council (BARC)

- Formed in **2014**, it is the **world's largest television audience measurement service**.
- It is the only rating body for the **broadcasting sector** in India.

INDU MALHOTRA PANEL TO PROBE PM SECURITY BREACH

Recently, the Supreme Court of India has appointed a committee chaired by its former judge Indu Malhotra.

- The Committee is appointed to inquire into a security breach that led to **the Prime Minister's convoy being stuck on a flyover in Punjab**.

KATHAK DANCER PANDIT MUNNA SHUKLA DIES AT 78

Recently, Kathak dancer Pandit Munna Shukla dies at 78.

Kathak

- Kathak is the traditional dance form of **Uttar Pradesh**.
- Kathak derived its name from the '**Kathika**' or the story-tellers who recited verses from the epics, with gestures and music.

- Kathak is generally accompanied with **dhrupad music**.
- Taranas, thumris and ghazals were also introduced during the **Mughal period**.

The elements of a Kathak recital are:

- **Ananda** or the introductory item through which the dancer enters the stage.
- **Thaat** comprising soft and varied movements.

- Todas and Tukdas are small pieces of fast rhythm.
- **Jugalbandi** is the main attraction of kathak recital which shows a competitive play between the dancer and the table player.
- **Padhant** is a special feature in which the dancer recites complicated bols and demonstrates them.
- **Kramalaya** is the concluding piece comprising of intricate and fast footwork.
- **Gat bhaav** is dance without any music or chanting. This is used to outline different mythological episodes.

An important feature of Kathak is the development of different **gharanas** as it is based on Hindustani style of music:

- **Lucknow:** Reached its peak under the reign of Nawab Wajid Ali Khan. It puts more importance on expression and grace.
- **Jaipur:** Initiated by Bhanuji, it emphasised fluency, speed and long rhythmic patterns.
- **Raigarh:** It developed under the patronage of Raja Chakradhar Singh. It is unique in its emphasis on percussion music.

Banaras: It developed under Janakiprasad. It sees a greater use of floorwork and lays special emphasis on symmetry.

LOHRI, MAKAR SANKRANTI, PONGAL AND BHOGALI BIHU: INDIA'S WINTER HARVEST FESTIVAL WITH MANY NAMES

Recently, various harvest festivals, including Makar Sankranti, were celebrated across India.

Genesis:

- India is an agricultural nation. **Rabi crops (November-March) are start ripening** around from January.
- Many **regional, religious, and mythological beliefs accompanied by the ripening of Rabi crops**, are celebrated like festivals, by different names.
- So, usually, **all of these harvest festivals are celebrated in January.**
- These festivals also mark the **end of the winter with the winter solstice** and the **start of longer days.**
- Geographically, **strong westerly winds blow is noticed in December-January.** So, **Kites are flown during this time.**

Harvest festivals of India:

Makar Sankranti:

- It is a Hindu festival, also known as **Maghi**.
- It is believed that **Bhisma Pitamah breathed his last breath** on Uttarayan.
- It marks the **entry of the sun into the zodiac sign of Makara (Capricorn)** as it travels on its celestial path.
- It marks the **onset of summer and the six-month-long auspicious period for Hindus.**
- Famously, it is celebrated as **Uttarayan** in Gujrat.

Magh Bihu in Assam

- The indigenous folk dance, called **Bihu dance**, is performed.
- **Pitha**, a famous sweet dish, is prepared.

Pongal in Tamil Nadu

- It is a 4-day festival, celebrated with a family gathering and different rice dishes.
- **Kummi dance** is performed during this festival.

Lohari in Punjab

- It celebrated primarily by **Sikhs and Hindus** all across the India.
- It marks the end of **winter season**.
- Observed a night before Makar Sankranti, this occasion involves a **Puja Parikrama** around the bonfire.
- The Bhangra and Gidda dance on dhol beat are performed.

Other harvest festivals of India are:

- Maghi in Punjab
- Maghi Saaji in Himachal Pradesh
- Uttarayan in Jammu, Gujarat, and Uttar Pradesh
- Sakraat in Haryana
- Sukarat in central India
- Ghughuti in Uttarakhand
- Dahi Chura in Bihar
- Makara Sankranti in Odisha, Karnataka, Maharashtra, Goa, and West Bengal
- Sankranthi in Andhra Pradesh and Telangana.

WHY IS ARMY DAY CELEBRATED ON JANUARY 15 EVERY YEAR? KNOW HERE

Recently, Army Day is celebrated on January 15. It is celebrated every year.

- **Army Day 2022** marks the **74th Army Day**, with the **theme of 'In Stride with the Future'**.

Background:

- On January 15, 1949, Field Marshal Kodandera M Cariappa had taken over the charge as Indian Army's first Commander-in-Chief. To remember and commemorate this day, it is celebrated as Army Day or Indian Army Day.
- It is celebrated to recognize and acknowledge the achievements and risks undertaken by Indian army personnel.

INDIAN ARMY HAS UNVEILED ITS NEW COMBAT UNIFORM DESIGNED BY NIFT, WHICH CONSISTS OF A LOT OF SPECIAL FEATURES.

Recently, the new combat uniform for the Indian Army was unveiled.

Difference in the new uniform different from the Army's old uniform

- The main changes in the new uniform are with regard to the **camouflage pattern, design, and the use of a new material**.
- While the new unique camouflage pattern retains the combination of the same colours (**olive green** and earthen shades), the pattern is **digital** now.

- It has been designed keeping in mind the many kinds of **operational conditions** that the soldiers function in, from deserts to high-altitude areas, jungles and plains.
- The **fabric** for the new material makes it **lighter, sturdier, more breathable**, and

more suitable for the different terrains that soldiers are posted in.

- The cotton-to-polyester ratio is **70:30**, making it quicker to dry, more comfortable to wear in humid and hot conditions, and lightweight.
- The uniforms will be barcoded and **QR coded** to maintain their uniqueness.

WEST BENGAL'S TABLEAU REJECTED FROM R-DAY PARADE WITHOUT ASSIGNING ANY REASON

West Bengal CM expressed concern over rejection of West Bengal's tableau, without assigning any justifications from central government, in the upcoming 73rd Republic Day parade.

Genesis:

- The **Union Defence Ministry** is responsible for the Republic Day parade and the celebrations.
- Tableaux are made and represented by all the states, the Union Territories, Central Government departments, and a few constitutional authorities

Details:

- The **Defence Ministry** invite and finalizes the participants of tableaux, on a prescribed **theme**.

- The theme of 2022 republic day parade is India@75 – Freedom struggle, Ideas @ 75, Achievements @ 75, Actions @ 75 and resolve @ 75.

Scrutiny process of Tableau selection:

- After receiving proposals from the participant, the **Defence ministry's Expert Committee (committee of distinguished persons drawn from various fields)** analyses it.
- Then if found suitable, a 3D model of the proposed tableau is presented by a concerned participant in front of **the Expert Committee**.
- In a later stage, again the suitability, impact, visual appeals of the proposed tableau are analysed and final approval is granted.

CBSE HOLDS 27TH NATIONAL ANNUAL CONFERENCE OF SAHODAYA SCHOOL COMPLEXES IN GWALIOR

Recently, the 27th National Annual Conference of Sahodaya School Complexes was organized by CBSE.

Highlights:

At the event, Nav-Kala Vithika and Amiyotsav were launched.

- **Nav-Kala Vithika** - A digital art gallery showing artistic skills of young students of CBSE schools from across the country.
- **Amiyotsav** – An e-souvenir consisting of case studies on the preservation of the heritage of the country.

Sahodaya School Complexes:

- Sahodaya School Complexes are a **cluster of CBSE affiliated neighbourhood schools** which **voluntarily come together** to share best practices and strategies for school education.
- At present, there are 260 complexes active throughout the country.

It identifies six areas for collaboration amongst schools of its complex:

- Educative Management
- Professional Growth of Teachers
- Evaluation
- Value-Oriented School Climate
- Human Resource Mobilization
- Vocationalisation of Education.

Genesis:

- The idea of Sahodaya Schools Complexes was first given by the **Education Commission, 1966**.
- The **National policy on Education, 1966** reiterated the need for promoting school complexes for meeting the quality of education.
- The idea of Sahodaya School Complexes was further concretized when CBSE, jointly with **National Progressive Schools' Conference (NPSC)**, organized a two-day conference in 1986.
- In 1987, CBSE in pursuance of the National Policy of Education, 1986 implemented **National policy on Education** in CBSE affiliated Schools-Programme

PM MODI PAYS TRIBUTES TO TAMIL POET THIRUVALLUVAR ON HIS BIRTH ANNIVERSARY

Recently, the Prime Minister paid tribute to the Tamil poet and philosopher Thiruvalluvar on the occasion of his birth anniversary, which is observed as Thiruvalluvar Day.

Thiruvalluvar:

- Thiruvalluvar, commonly called **Valluvar**, lived in 4th century BCE.

- It is believed that he lived in **Mylapore town** after he was born under a tree, in the neighbourhood of Chennai.
- The word 'Thiruvalluvar', means '**the devotee of the Valluva caste**'.
- He was born in **Madurai**, the capital of the Pandyas.
- He is regarded as a **Avatara of Brahma**.
- His wife **Vasuki** was a chaste and devoted lady, an ideal wife.

- He earned a living by **weaving cloth and selling it**.
- Thiruvalluvar is regarded as a **cultural icon**.
- He showed people that a person could lead the **life of a Grihastha** or householder, and at the same time, **lead a divine life** or a life of purity and sanctity.
- He showed people that there was no necessity to leave the family and become a Sannyasin to lead a divine life of purity and sanctity.
- He is known for his famous work "**Thirukkural**", which is considered as a very important text in Tamil literature.
- He was chosen as the greatest **historical figure** in the Tamil language by Tamil scholars unanimously.

Thirukkural:

- It is a collection of couplets on **politics, love, ethics** and matters concerning **economics**.
- It includes 1330 couplets called **Kurals**.
- These are divided into 133 sections with 10 couplets each.
- The text is based on '**dharma, artha and karma**', meaning 'virtue, wealth and love'.
- It is known for its **universality and secular nature**.

- Written on the foundations of ahimsa, it emphasizes non-violence and moral vegetarianism as virtues for an individual.
- It **redefined the cultural values of the Tamil land**, by denouncing all the previously held misbeliefs that were common during the Sangam era.
- The text has been translated into at least 40 Indian and non-Indian languages, making it one of the **most translated ancient works**.
- The text has been dated variously from 300 BCE to 5th century CE.

Recognitions:

- Thiruvalluvar Day is observed either on **January 15 or 16** as a part of the Pongal celebrations, to mark his immense knowledge, wisdom and contributions to Indian literature.
- A temple was built in the early 16th century within the **Ekambareshwar complex** in honour of Tiruvalluvar.
- A Temple-memorial called **Valluvar Kotam** was built in 1976, in Chennai.
- It houses one of the largest auditoriums in Asia, and a **133-foot tall statue** of Thiruvalluvar stands at Kanyakumari as well.

INTER-STATE WATER DISPUTES ACT CREATING MORE DISPUTES THAN RESOLVING THEM: KARNATAKA CM

Recently, Karnataka Chief Minister emphasized the need to revisit the Inter-State River Water Disputes Act for the speedy execution of many irrigation projects.

Inter-State River Water Disputes Act, 1956

- The Interstate River Water Disputes Act, 1956 (IRWD Act) is an Act of the

Parliament of India enacted under **Article 262** of Constitution of India.

- Article 262(1) provides that Parliament may **adopt legislation for the settlement of disputes** or complaints concerning the use, distribution or control of transboundary waters in a river or river valley.

- The Act provides for the **adjudication of disputes** relating to waters of **inter-state rivers** and **river valleys**.

Features of the Act:

- The Act empowers Central government to set up a **Tribunal** for dispute resolution on the request of a state government.
- The Tribunal must give its decision within **three years**, which may be extended by two years.
- The **decision of the Tribunal must be published** by the central government in the official gazette.
- The central government maintains a **data bank** and **information system** at the national level for each river basin.

Issues with the act

- **Limited role of Centre:**
 - The **centre can act** on the dispute, only on the request of the state.
- A **state cannot directly approach** the tribunal:
 - The state has to request the Centre to refer an interstate river dispute to a tribunal.
- **Delays in the procedures:**
 - The multiplicity of tribunals has led to an **increase in bureaucratic delays**, and possible **duplication of work**.
 - Thus, there is a dire need for **speedy disposal** of such disputes with a permanent institutional mechanism.
- **Disenchantment with provisions:**

- There is **no time limit** for publishing the reports, and the states have no remedy.
- The **unsatisfactory adjudication** leads to exaggerated claims by both the dispute parties.
- The existing provisions do not rule out recourse to negotiations, or mediation or reconciliation.
- There is no provision to ensure that an award once given is duly implemented.
- **Lack of legal provisions** in the Act has resulted in the creation of more disputes.

Inter-State River Water Disputes (Amendment) Bill, 2019

- The Inter-State River Water Disputes (Amendment) Bill, 2019 amends the Inter-State River Water Disputes Act, 1956.
- The bill provides for the setting up of a **Disputes Resolution Committee (DRC)** to resolve the dispute amicably.
 - The states concerned would be encouraged to come to a **negotiated settlement** through a Disputes Resolution Committee (DRC).
- The central government will set up an **Inter-State River Water Disputes Tribunal**, for the adjudication of water disputes.
 - It **binds the Centre to set up DRC** to amicably resolve the issue by negotiations in **one year**.
- The Bill provides that the central government will appoint or **authorise an agency** to maintain data bank.

ASPIRATIONAL DISTRICTS GET EXEMPTION FROM NEW ENGINEERING COLLEGE MORATORIUM

Aspirational districts will be exempted from the extended two-year moratorium on setting up of new engineering colleges across the country.

Genesis:

- In 2019, **IIT-Hyderabad** had advised the government to put a moratorium on granting approvals to new engineering colleges for two years, starting 2020.

Aspirational District Program:

- Government of India launched the 'Transformation of Aspirational Districts' initiative in 2018.
- **Aim:** To improve India's ranking under Human Development Index, raising living standards of its citizens and ensuring inclusive growth of all.
- A total of 117 Aspirational districts have been identified by **NITI Aayog**.

Core Activities:

- Convergence of scheme resources implemented with **Left Wing Extremism (LWE) funds**.
- Real-time progress tracking of the district plans.
- Coordinated efforts, community action, and other **development interventions**.
- **Integrated support** from Central Ministries, State Governments, and District Administrations.
- **Focus Area:** Health & Nutrition (30%), Education (30%), Agriculture & Water Resources (20%), Financial Inclusion & Skill Development (10%), and Basic Infrastructure (10%).

MoHUA ANNOUNCES WINNERS OF STREETS FOR PEOPLE AND NURTURING NEIGHBOURHOODS CHALLENGE

Recently, the Ministry of Housing and Urban Affairs (MoHUA) declared the winner cities for the Streets for People Challenge, and the Nurturing Neighbourhoods Challenge.

- At the event, the MoHUA also launched **Season-2 of India Cycles4Change and Streets for People Challenges**.

Genesis:

- Both the Streets for People Challenge and the Nurturing Neighbourhoods Challenge are the **competition between Smart cities** under the Smart Cities Mission (SCM).
- SCM was launched in 2020, since then these challenges are being conducted among the selected smart cities, in a phase-wise manner.

Streets for People Challenge (Streets4People Challenge):

- It is a challenge for a paradigm **shift from car-centric roads to people-centric streets**, by **prioritizing them for pedestrians**.
- The **National Urban Transport Policy, 2006** also has a similar vision.
- The challenge was conducted with **technical support** from the **Institute for Transportation and Development Policy (ITDP India)**.
- Winner cities will be awarded **Rs. 50 lakhs** each by MoHUA.

Nurturing Neighbourhoods Challenge.

- **MoHUA** announced winner cities for this challenge in **collaboration with the Bernard van Leer Foundation**

(BvLF) and technical partner World Resources Institute (WRI) India.

- The Challenge is a 3-year phased initiative aimed at shaping early childhood-friendly neighborhoods in Indian cities.

- Under it, included activities are: Creation of public spaces in slums, age-appropriate play areas, enhanced outdoor waiting spaces around primary health centers and anganwadis, amenities for caregivers etc.

INDIA POST PAYMENTS BANK CUSTOMER BASE CROSSES 5 CRORE MARK

Recently, India Post Payments Bank (IPPB) has crossed the five-crore customer mark to become one of the fastest growing digital payments banks in the country.

India Post Payments Bank (IPPB):

- It has been established under the Department of Posts, Ministry of Communication by with 100% equity owned by Government of India.
- **Launched in:** 2018.
- **Aim:** To build the most accessible, affordable and trusted bank for the common man in India.
- **Mandate:** To remove barriers for the unbanked and under-banked and reach the last mile leveraging the postal network.

Safal, Sural and Sugam Accounts:

- While opening a bank account in the bank one can choose from three types options: Regular Account or 'Safal', Basic Savings Bank Deposit Account (BSBDA) or 'Sugam', and BSBDA Small or 'Saral'.
- All three are **zero balance accounts** (they do not require the bank account holder to maintain any specific balance every month).

Features:

- It provides paperless and **cashless banking services** in a simple and secure manner to the customers.
- It delivers **affordable banking solutions** through intuitive interfaces available in 13 languages.

Services:

- **Account:** The bank offers savings and current accounts up to a balance of ₹1 Lakh.
- **QR Card:** Customers can use QR code payments eliminating the need to remember account numbers, PINs and passwords.
- Unified Payments Interface
- Immediate Payment Service
- National Electronic Funds Transfer
- Real-time gross settlement
- Bharat BillPay
- Direct Benefit Transfer
- RuPay Debit Card
- AEPS (Aadhaar Enabled Payment Service)

THREE DEAD, 11 INJURED IN EXPLOSION ON BOARD DESTROYER INS RANVIR

Three Navy personnel killed in explosion onboard **INS Ranvir** in Mumbai.

INS Ranvir

- INS Ranvir, among the **oldest warships in the Navy**, is a **Soviet-era destroyer** and was commissioned in April 1986.

- It is the **fourth of the five Rajput-class** destroyers built for the Indian Navy.
- It is the first of the **Ranvir class**.
- The other Ranvir class destroyer is **INS Ranvijay**.

FM SITHARAMAN ACCUSES CONGRESS-LED UPA GOVT OF 'FRAUD' IN ENTERING INTO 2005 ANTRIX-DEVAS DEAL

Finance Minister accused Congress-led UPA of entering into a fraud and scandalous deal with Devas Multimedia by allocating S-band spectrum used by the defence for pittance.

What was the Devas-Antrix deal?

- An agreement was signed between **Antrix**, government company and **Devas Multimedia Pvt Ltd**.
- Under the deal, **ISRO would lease to Devas two communication satellites (GSAT-6 and 6A) for 12 years** for Rs 167 crore.
- **Devas would provide multimedia services** to mobile platforms in India **using S-band transponders** on the satellites, with ISRO leasing 70 MHz of S-band spectrum.
- After six years the **deal was annulled by the government** following a Cabinet Committee on Security decision to terminate the agreement **to use the S-band for security purposes**.

After the annulment:

- **Devas** approached various tribunals seeking compensation and was **awarded compensation** of \$1.2 billion by an **International Chamber of Commerce** tribunal in 2015.

- **Antrix** filed a **plea in the National Company Law Tribunal (NCLT)** in January 2021 **for liquidation of Devas** in India, which it said was incorporated in a fraudulent manner.
- The **NCLT ordered the liquidation**, which was up held by the National Company Law Appellate Tribunal and by the Supreme Court.

Antrix Corporation Limited:

- It is an **Indian government-owned company** under the **administrative control** of the **Department of Space**.
- It was **incorporated in September 1992**.
- It **launched 239 satellites** between 2016 and 2019.

Objectives:

- To **commercially exploit space products** of Indian Space Research Organization.
- To providing **technical consultancy services** and **transferring technologies** to industry.

International Arbitration:

- It is the arbitration between companies or individuals in different states, usually by including a provision for future disputes in a contract.
- It allows the parties to **avoid local court procedures**.

New York Convention:

- **India is a signatory** to the Convention on the Recognition and Enforcement of Arbitral Awards, 1958, commonly known as the New York Convention.

PLEA CHALLENGES EXPANSION OF DEFINITION OF DRUG

Recently, Delhi High Court asked the Centre to respond to a petition challenging the expansion of the definition of a drug under the Narcotic Drugs and Psychotropic Substances (NDPS) Act.

Petitioner challenged two notifications (2009 and 2011) under the NDPS Act stating that:

- The notifications were **issued in excess of conferred authority**.
- The notification has the power of **creating a new category of offence** by penalising the preparation of a drug on a par with the drug itself.
- There is a **violation of Article 14** (equality before law) of the Constitution as there is no rational nexus between the classification created by these notifications and the object of the NDPS Act.
- It contended that the NDPS Act **requires only the pure narcotic drugs or psychotropic substances** to be considered for determining quantities.

Narcotic Drugs and Psychotropic Substances Act, 1985 (NDPS Act)

- NDPS Act is an act of the parliament to:
 - **consolidate** and amend the law relating to **narcotic drugs**
 - make stringent provisions for the **control and regulation** of operations relating to **narcotic drugs and psychotropic substances**.

- The **Narcotics Control Bureau** was set up by the Central Government in **1986** to coordinate drug law enforcement nationally.

Key Features of the Act:

- It **prohibits** a person from the production, cultivation, possession, sale, purchasing, transport, storage, and/or consumption of any narcotic drug or psychotropic substance.
- It provides for the **implementation** of the provisions of the International Conventions on Narcotic Drugs and Psychotropic Substance.
- It **defines** terms like addict, drug, cannabis, board, controlled delivery, commercial quantity, corresponding law, conveyance, essential narcotic drug etc.
- It **empowers** central government to:
 - **add to or omit** from the list of psychotropic substances.
 - take measures for **preventing and combating abuse** of and **illicit traffic** in narcotic drugs, etc.
 - set up **The Narcotic Drugs and Psychotropic Substances Consultative Committee**.
- It has provision for the **prohibition of certain activities** relating to property derived from offence.
- It **penalises** financing of certain illicit activities (such as cultivating cannabis or manufacturing narcotic drugs) or harbouring persons engaged in them.

- Persons found guilty of this offence will be punished with rigorous imprisonment of at

least **ten years** (extendable up to 20 years) and a fine of at least **one lakh rupees**.

CABINET APPROVES INFUSION OF ₹1,500 CRORE IN IREDA

Recently, the Cabinet Committee on Economic Affairs (CCEA) approved infusion of ₹1,500 crores in the Indian Renewable Energy Development Agency Limited (IREDA).

Indian Renewable Energy Development Agency Limited (IREDA):

- Established in 1987

- **Mini Ratna (Category – I) Company, under Union Ministry of New and Renewable Energy (MNRE).**
- **Motto:** “Energy For Ever”
- **Function:** It promotes, develops, and extends financial assistance for **Renewable Energy** and Energy Efficiency/Conservation Projects.

EDITORS GUILD EXPRESSES ANGUISH OVER KASHMIR PRESS CLUB CLOSURE

The Editors Guild of India expressed anguish over the Kashmir Press Club (KPC) shutting down.

Freedom of Media & Democracy:

- Freedom of the media is the principle that **communication and expression** should be considered a **right** to be exercised freely.
- Such freedom implies the **absence of interference** from an overreaching state; its preservation may be sought through constitution or other legal protection and security.

Impact of Free Media:

- A free media helps in **smooth functioning of democracy** by dissemination of ideas, information and knowledge and debate.
- It puts **forward the grievances of people** and question the decisions of the government and make it accountable.

- Free media is the **voice of the masses** empowers them with the right to express opinions, thereby strengthening the democracy.

Provisions for Freedom of Media:

- The Indian Constitution guarantees freedom of speech and expression **under Article 19.**
- Freedom of the press is **not expressly protected** by the Indian legal system but it is **implied** under **article 19(1) (a)** of the constitution.
- However, a law could impose restrictions on the exercise of this right under certain prescribed circumstances.

Threats to Freedom of Press:

- **Unauthentic news**, paid news, advertising editorials and **influenced news** are threats to free and unbiased media.
- **Corporate and political power** compromise freedom of press by

having vested interests in large sections of the media.

- **Rising violence** against unbiased and true journalists is the most imminent threat facing press freedom.

ABDUL GHAFFAR KHAN DEATH ANNIVERSARY: ALL YOU NEED TO KNOW ABOUT 'FRONTIER GANDHI'

On 20th January 1988, Khan Abdul Ghaffar Khan had passed away in Peshawar, Pakistan.

Khan Abdul Ghaffar Khan (1980-88):

Personal life:

- He was **also known as the Badshah Khan, Frontier/Simant Gandhi or Bacha Khan, Fakhr-e-Afghan.**
- **Amir Chand Bombwal had firstly used the word Frontier/Simant Gandhi** (Sarhad Gandhi) for Abdul Ghaffar Khan.
- Khan was a follower of Mahatma Gandhi and followed a non-violent way to fight against the british raj.
- He **advocate for Hindu-Muslim unity and opposed the Partition** of India.
- After partition, he **became a Pakistani Citizen.**
- Autobiography: **The Frontier Gandhi: My Life and Struggle**
- Received **Bharat Ratan prize in 1987.**

Contribution:

- He was **associated with the Khalifat committee and the Khalifat movement (1919-24).**
- Participated in **Civil disobedience movement of 1930s.**
- In 1929, he established **the Khudai Khidmatgar** (Servants of God). It was an anti-colonial nonviolent resistance movement against the British raj.
- In June 1947, Khan and other members of Khudai Khidmatgar leaders issued the **Bannu Resolution an independent state of Pashtunistan for Pashtuns.**
 - However, the British government refused it.
 - As result, **he boycotted the 1947 North-West Frontier Province (NWFP) referendum.**
 - NWFP referendum was led to decide that NWFP would join the Dominion of India or Pakistan upon the Partition of India.
 - Out of total votes, 99% of voters wanted a merger with Pakistan.

AIR INDIA CANCELS MOST US FLIGHTS FOR 2ND DAY OVER 5G SAFETY WORRY

Recently, Air India and several other airlines have cancelled flights to the US, worrying that the 5G roll-out there may affect aircraft and passenger safety.

5G network?

- 5G refers to **5th generation mobile network.**
- 5G networks could **deliver faster internet with improved latency.**
 - Latency is the time difference between sending and receiving messages.

- It explores a whole range of **services and capabilities**.
- It includes deployment of autonomous cars, drones, remote healthcare, precision agriculture, virtual reality and industrial automation.
- In order to avail faster services from the 5G spectrum, operators want to **operate at higher frequencies**.

Why are the airlines concerned?

- Earlier the mobile operators and airlines were using **different frequency bands** to prevent the risk of interference.
- In the US, the radio frequencies being used for 5G are close to the ones used by radio **altimeters on aeroplanes**.
- The concern is that interference from 5G transmissions could stop the instruments from working properly, and cause safety problems.

5G affect flight safety?

- The new 5G technology could interfere with instruments such as **altimeters**, which measure the altitude of the aircraft.
- Altimeters emit radio waves at **4.2-4.3 Gigahertz (GHz) frequency**, which could interfere with a 5G band called C-Band, which lies between **3.7-4.4 GHz**.

- The risk of interference restricts the use of radio altimeters, which causes poor visibility.
- Altimeter readouts are used to facilitate **automated landings** and to help **detect dangerous currents** called wind shear.
- The auto-pilot mechanism enabled by altimeters **ensures safety** during landing and take-off.
- Not using the auto-pilot would lead to more **fuel consumption and higher costs for airlines**.

Can this impact India's 5G roll-out?

- **India is yet to auction 5G spectrum**.
- India's 5G auctions are expected to include spectrum bands of **3.3GHz -3.6GHz**.

Do other countries using 5G share these concerns?

- 5G varies from country to country.
- **European Union** networks operate at **lower frequencies**, reducing the risk of interference.
- **France** has **buffer zones** around airports, where 5G signals are restricted.
- The antennas are tilted downwards to prevent potential interference.

STATEHOOD DAY: PM MODI GREETES PEOPLE OF MANIPUR, MEGHALAYA, TRIPURA

The three States were formed on 21 January, 50 years back in 1972 with the enactment of North-Eastern Areas (Reorganisation) Act, 1971.

Merger of Manipur with India

- With demand of Manipur's **internal autonomy**, **Maharaja of Manipur**, Bodh

Chandra Singh, **signed the Instrument of Accession** with the Indian government.

- Under the pressure of public opinion, the Maharaja held **elections in Manipur in June 1948** and the state became a constitutional monarchy.
- Thus, **Manipur** was the **first part of India** to hold an election based on **universal adult franchise**.

- The **Government of India** succeeded in pressuring the Maharaja into signing a **Merger Agreement in September 1949**, without consulting the popularly elected Legislative Assembly of Manipur.

Merger of Tripura:

- Tripura was a **princely state** before its merger with Indian union.
- The **widow queen** of the last king Bir Bikram, **Kanchan Prabha**, who took over Tripura and its administration was **instrumental for Merger of Tripura** kingdom in Indian Union.

Merger of Meghalaya into India

- **In 1947**, the rulers of the Garo and Khasi region **acceded to** the newly independent country of **India**.
- Meghalaya is a **small hilly state** located in the North Eastern Region of India.
- It came into **existence as an autonomous state** within the state of **Assam** on 2 April 1970.
- It comprised of the **United Khasi and Jaintia Hills and the Garo Hills** districts.

AMAR JAWAN JYOTI MERGED WITH ETERNAL FLAME AT NATIONAL WAR MEMORIAL IN NEW DELHI

The flame from the **Amar Jawan Jyoti** at the India Gate has merged with the **flame at National War Memorial**.

Amar Jawan Jyoti

- It was **inaugurated on Republic Day in 1972**.
- It was to mark **India's victory over Pakistan in the 1971 War**, which resulted in the creation of Bangladesh.
- It was made to commemorate the martyred and unknown soldiers of the Indian Armed Forces who died during the war.

Features of Amar Jawan Jyoti

- It included a **black marble plinth, a cenotaph**, which acted as a tomb of the unknown soldier.
- It had four urns on it, with four burners.
 - On normal days **one of the four burners** were kept alive, but on important

days like the **Republic Day**, **all four burners were lit**.

- These burners were what is called the **eternal flame**, and it was **never allowed to be extinguished**.

Why was the eternal flame extinguished from Amar Jawan Jyoti?

- **The eternal flame** paid homage to the **soldiers killed in the 1971 War**, but does not mention their name, and the India Gate is a "**symbol of India's colonial past**".
- Since the inauguration of National War Memorial, **Indian political and military leaders and foreign dignitaries pay their tributes** to the fallen soldiers at the **National War Memorial**.
- It can also be seen as part of the **government's redevelopment of the entire Central Vista**, of which India Gate, the **Amar Jawan Jyoti and the National War Memorial** are parts of.

- **Central Vista Redevelopment Project** refers to the ongoing redevelopment to revamp the Central Vista, India's central administrative area located near Raisina Hill, New Delhi.

National War Memorial

- It was **inaugurated in 2019**.
- It was built to **commemorate all the soldiers who have laid down their lives** in the various battles, wars, operations and conflicts of Independent India.

Key feature of National War Memorial

- **The architecture** of the memorial is based on **four concentric circles** namely **Raksha Chakra, Tyag Chakra, Veerta Chakra, Amar Chakra**.
- **Raksha chakra**: Known as the **Circle of Protection** which is marked by a row of trees, each of which represent soldiers, who protect the country.
- **Tyag chakra**:
 - Known as the **Circle of Sacrifice**, has circular concentric walls of honour based on the **Chakravyuh**.

- The walls have **independent granite tablets** for each of the soldiers who have died for the country since Independence.
- **Veerta Chakra**: Known as the **Circle of Bravery**, has a covered gallery with **six bronze crafted murals depicting the battles** and actions of **Armed Forces**.
- **Amar Chakra**: Known as the **Circle of Immortality**, which has an **obelisk**, and the **Eternal Flame**.

India Gate

- It was **inaugurated in 1931**.
- India gate, formerly known as the **All-India War Memorial**, is a **war memorial** located astride the Rajpath, New Delhi.
- It stands as a **memorial to 90,000 soldiers** of the **British Indian Army** who died in between **1914 and 1921 in the First World War**.
- It was designed by **Sir Edwin Lutyens**, the gate evokes the **architectural style of the triumphal arch** such as the Arch of Constantine, in Rome.

PM MODI TO UNVEIL 216-FOOT 'STATUE OF EQUALITY' IN HYDERABAD

Prime Minister will soon unveil statue of Ramanujacharya, in Hyderabad.

Facts about the statue:

- The 216-foot outdoor statue will be the **world's second-largest statue** featuring a sitting posture.
- The statue is made of '**panchaloha**,' a five-metal alloy consisting of gold, silver, copper, brass, and zinc.
- The inner sanctorum, deity of Ramanujacharya is made of **120 kilos of**

gold, to commemorate the 120 years the saint spent on earth.

Ramanujacharya

Life:

- Ramanuja or Ramanujacharya was an **Indian philosopher, theologian, social reformer**.
- He was born in 1017 in Tamil Nadu, and was named **Lakshmana**.

- He was also referred to as **Ilaya Perumal** which means the radiant one.
- He studied under **Yadvaprakasha**, a follower of the Advaita system of the Vedanta Shankara.
- He crafted his own doctrine called **bhakti**.
 - It emphasised the unconditional love of a devotee to a personal god.
- He later became the priest of a temple and began teaching about **moksha**.
- He was one of the most important **exponents of the Sri Vaishnavism** tradition within Hinduism.
- He disappeared at the age of 120 in **Srirangam, Tamil Nadu** in 1137 CE.

Contribution:

- He brought about a **socio-cultural revolution** by preaching that every human being is equal, irrespective of religion, gender, race, caste, or creed.
 - He strongly **opposed caste discrimination** and allowed entry of all into temples.

- He named subjugated classes **Thirukkulathar-Born Divine**.
- He made **'bhakti'** the major force within different traditions of Hinduism.
- He propagated **theories** that assert that there exists a plurality and distinction between 'Atman' (soul) and 'Brahman'.
 - There is a unity of all souls and that the individual soul has the potential to realise identity with the Brahman.
- **Major Works:**
 - **Vedārthasangraha** (Summary of Vedas meaning)
 - **Sri Bhāshya** (a review and commentary on the Brahma Sutras)
 - **Bhagavad Gita Bhāshya** (a review and commentary on the Bhagavad Gita)
- His philosophical foundation is called **Vishishtadvaita** in the Hindu tradition.
 - His ideas constitute one of three subschools in Vedānta.

THE MAKING OF THE TYAGARAJA ARADHANA

Recently, the Tyagaraja Aradhana in Thiruvaiyaru has been reduced to just one day this year, instead of the usual five days.

- **Tyagaraja Aradhann** is the commemorative music festival that is held every year in Thiruvaiyaru in Thanjavur district of **Tamilnadu**, during the months of January to February in Tyagaraja's honor.

Tyagaraja/ Tyagayya

- He was a composer and vocalist of **Carnatic music**, a form of Indian classical music.
- He was prolific and highly influential in the development of **India's classical music tradition**.
- Tyagaraja and his contemporaries, **Shyama Shastri** and **Muthuswami Dikshitar**, are regarded as the Trinity of Carnatic music.

Works

- Tyagaraja composed thousands of devotional compositions, most in **Telugu** and in praise

of **Lord Rama**, many of which remain popular today.

- Of special mention are five of his compositions called the **Pancharatna Kritis**, which are often sung in programs in his honour.

- Tyagaraja saw the reigns of four kings the **Maratha dynasty**:
 - Tulaja II (1763–1787)
 - Amarasimha (1787–1798)
 - Serfoji II (1798–1832)
 - Sivaji II (1832–1855).

PM MODI INAUGURATES NEW CIRCUIT HOUSE IN SOMNATH; TARGETS CONGRESS

Recently, the Prime minister of India inaugurates the new circuit house in Gir Somnath district of Gujarat.

Somnath temple

- Somnath temple is also known as **Deo Patan**.
- **Deity**: Lord Shiva
- It is the most sacred pilgrimage site for the Hindus.

Location:

- Temple is located along the coastline in **Prabhas Patan** near **Veraval**, **Saurashtra** region of Gujarat.
- The Somnath temple is located close to the ancient trading port of **Veraval**.

Construction

- In past, the temple has suffered destruction at the hands of **Mahmud Ghazni** in

1024, **Khilji's** army in 1296, **Muzaffar Shah** in 1375, **Mahmud Begada** in 1451, and **Aurangzeb** in 1665.

- The first Somnath temple varies between the early centuries of the **1st-millennium to about the 9th-century CE**.
- The present Somnath temple was reconstructed in the **Māru-Gurjara style** of Hindu temple architecture.

Significance:

- In **Hindus**, it is believed to be the first among the **twelve Jyotirlinga shrines of Shiva**.
- The temple finds its existence in the most ancient texts of Hindus like **Shreemad Bhagavat, Skandpuran, Shivpuran, and Rig-Veda**.
- It has been a pilgrimage site from ancient times as it was said to be the junction of three rivers, Kapila, Hiran and the mythical Saraswati (called triveni sangam).

UNESCO TAG SOUGHT FOR LIVING ROOT BRIDGES

Recently on the Meghalyas 50th year of Creation, the Chief minister pitched for UNESCO World Heritage Site tag.

Living Root Bridges

- A living root bridge is a type of **simple suspension bridge** formed of living plant roots by tree shaping.
- These aerial bridges were built by weaving and manipulating the roots of the **Indian**

rubber tree that have been serving as connectors for generations in Meghalaya.

- They are handmade by the **Khasi and Jaintia tribes**.
- **Life Span:** The average life span of the bridge is 500 years.

Why only Indian Rubber Trees?

- Found in abundance in Meghalaya.
- Roots of Indian Rubber Tree are:
 - Elastic
 - Can easily combine
 - Can grow in rough, rocky soils

Method of Creation:

- It uses traditional **tribal knowledge** to train roots of the Indian rubber tree, found in abundance in the area, to grow laterally across a stream bed, resulting in a living bridge of roots.

Example of Famous Root Bridges

- The longest known example of a living root bridge is **Rangthylliang bridge**, near the small Khasi town of Pynursla in India. It can be accessed from the **village of Mawkyrnot**.

BSF's 'OPERATION SARD HAWA' ALONG PAK BORDER FROM JAN 23 TO 28

The Border Security Force will increase surveillance along the Pakistan border in Rajasthan under its Operation Sard Hawa.

Operation Sard Hawa:

- It is conducted by **Border Security Force (BSF)** at the western international border of **Rajasthan**.

- The operation will be carried out from January 23 to 28.
- Under this, vigil will be increased to check the instances of **infiltration due to the dense fog in the area**.
- BSF conducts "**Operation Garam Hawa**" in summer and "**Operation Sard Hawa**" in winter every year.

GOVT. ANNOUNCES SUBHASH CHANDRA BOSE AAPDA PRABANDHAN PURASKAR FOR 2022

Recently, the government announced the winners of Subhash Chandra Bose Aapda Prabandhan Puraskar 2022.

About the Award:

- **Administered by:** National Disaster Management Authority

- **Award is given on:** 23rd January on the birth anniversary of Netaji Subhas Chandra Bose
- **Aim:** To recognize the excellent work done by **individuals and institutions in India** in the field of Disaster Management.

Eligibility

- Only Indian nationals and Indian institutions can apply for the award.
- **For institutional awards:** Voluntary organizations, corporate entities, **academic/research institutions, response/ uniformed forces**, or any other institution may apply for the award.

Criteria for Award

- The applicant must have worked in the area of Disaster Management like:
 - Prevention, Mitigation, Preparedness, Rescue, Response, Relief, Rehabilitation, Research, Innovation or Early Warning related work in India.

The application must highlight achievements in any one or more following criteria:

- Saving human lives.
- Reduction in the impact of disasters on lives, livestock, livelihoods, property, society, economy, or environment.
- Mobilization and provision of resources for effective response during disasters
- Immediate relief work in disaster-hit areas and communities

- Effective and innovative use of technology in any field of disaster management.
- Disaster mitigation initiatives in hazard-prone areas
- Capacity building of communities for response and risk reduction.
- Early warning and dissemination of disaster risk information to people on a real-time basis.
- Scientific/ technical research and innovation in any field of disaster management.
- Post-disaster recovery and rehabilitation.
- Continued functioning of critical infrastructure and basic services during disasters.
- Creating awareness among the masses for preparedness and risk reduction.

Price Reward

- **Institution:** A certificate and a cash prize of **Rs. 51 lakhs**.
- **Individual:** A certificate and a cash prize of **Rs. 5.00 lakhs**.
- An application by an institution does not debar any individual from that institution to apply for the award in his individual capacity.

GUJARAT'S REPUBLIC DAY TABLEAU TO SHOWCASE TRIBAL MASSACRE 'WORSE THAN JALLIANWALA BAGH'

Gujarat's tableau for the Republic Day parade will be based on an incident of tribal massacre 'worse than Jallianwala Bagh' that occurred in the State around 100 years ago.

British massacre of tribals in Gujarat

- It was happened in the **Pal-Chitariya and Dadhvaav villages of the district**, then part of Idar state.

- This incident took place on **March 7, 1922**.
- **Villagers from Pal-Chitariya and Dadhvaav gathered** on the banks of Her river under Tejawat's leadership **to protest against the land revenue tax (lagaan)** imposed by the British and feudal lords.
- Tejawat had also mobilised **Bhils from Kotda Chhavni, Sirohi and Danta** to participate in the event.

- The **Mewad Bhil Corps (MBC)**, a paramilitary force raised by the British, commanded by **HG Sutton**, fired bullets on people.

Motilal Tejawat

- He was the **leader of the Eki Movement** that was agitated in the 1920s in the adivasi-dominated border areas of present-day Rajasthan and Gujarat.
- He was born in **Koliyari in 1886**.
- He **witnessed the suppression of local Bhil people** at the hands of Thakurs and Britishers.
- His immediate source of inspiration was the **Bijolia movement**.
- He **organized several meetings in Bhil villages** in the erstwhile estate of Jhadol, which resulted in the formation of a committee that sought to articulate the

grievances and demands of the Bhil peasantry.

- He was a big supporter of **Gandhi Raj**.
- He is said to have stated during **speeches that once 'Gandhi raj' was established**, the agitators would have to pay only one anna in the rupee.

Bijolia movement

- It was a **peasant movement in the Bijolia jagir** of the former Mewar state (in present-day Rajasthan in India) **against excessive land revenue exactions**.
- Leadership to the movement was provided, at different times, by **Fateh Karan Charan, Sadhu Sitaram Das, Vijay Singh Pathik, and Manikyalal Verma**.
- The movement continued **till 1941 after a bitter struggle** lasting about half a century, gained national attention and resisted state oppression.

CDS CHOPPER CRASH WAS CAUSED BY WEATHER CHANGE, LEADING TO CONTROLLED FLIGHT INTO TERRAIN: IAF

The preliminary inquiry on the helicopter crash of Bipin Rawat said that the Controlled Flight into Terrain (CFIT) was the reason behind the crash.

Controlled Flight into Terrain (CFIT):

- According to the International Air Transport Association (IATA), a **CFIT incident is an accident in which there is a collision with terrain, water, or obstacle during a flight, without indication of loss of control**.
- Mostly, CFIT accidents are **avoidable in nature**.
- The difference in CFIT accidents versus other types of aviation accidents is the fact that the **aircraft remains under the control of**

the fight crew till the occurrence of the incident.

What exactly happened in the case of Gen. Rawat's flight?

- An unexpected change in weather conditions resulted in barring communication with the ground-based stations.
- It led to the **Spatial Disorientation** of the pilot resulting in a CFIT.
 - Spatial Disorientation is a condition where the pilot loses the ability to correctly interpret aircraft attitude, altitude, or airspeed about the terrain of earth or other points of reference.

Solution for CFIT accidents:

- Pilot training, including in simulators.
- Installation of **Ground Proximity Warning System (GPWS) / Terrain**

Awareness and Warning System (TAWS) in aircraft.

KERALA BIRD ATLAS

Kerala got its first-ever scientific bird atlas

- **The Kerala Bird Atlas (KBA)** is the first-of-its-kind state-level bird atlas in India.
- It offers authentic, consistent and comparable data through random sampling

from the **geographical terrain** split into nearly 4000 grids.

- It is considered to be a valuable resource for testing various **ecological hypotheses** and suggesting **science-backed** conservation measures.

GOA ELECTIONS 2022: BHANDARI COMMUNITY 'KEY TO' WINNING POLL-BOUND STATE

The ruling political party of Delhi has chosen its Chief Ministerial candidate from bhandari community.

- **Reason for choosing CM from bhandari community:** to correct the injustice the Bhandari community suffered at the hands of Goa's major parties who never picked a CM from the community despite its numerical strength.

Bhandari community:

- As per the 2011 census, **Goa's population has 66% Hindus, Christians (25%), Muslims (3.5%),** and the remaining others.

- The **Bhandaris** are Goa's largest caste group constituting more than 30% of Goa's total Hindu population.
- Their traditional **occupation was toddy-tapping and distilling, farm tilling, and working in orchards.**
- Bhandaris have the **status of Other Backward Class (OBC) in goa.**
 - As per 2014 data, **Bhandari's accounts for 61% of OBCs in Goa.**
- They are **spread across Goa and Maharashtra's Konkan belt** including parts of Ratnagiri and Sindhudurg.

PM MODI INTERACTS WITH RASHTRIYA BAL PURASKAR RECIPIENTS; EXTOLS VALOUR AND SACRIFICE OF GURU GOBIND SINGH'S SONS

Recently, the Prime Minister interacted with the Pradhan Mantri Rashtriya Bal Puraskar (PMRBP) awardees.

Pradhan Mantri Rashtriya Bal Puraskar:

- It is a civilian honour in India.

Categories:

Bal Shakti Puraskar

- It is awarded to **Indian citizens** for **achievement in innovation**, scholastic achievements, social service, arts and culture, bravery, or sports.
- **Eligibility:** Children between the age of 5 and 18.
- Instituted in 1996 as National Child Award for Exceptional Achievement.
- It was renamed in 2018 as **Bal Shakti Puraskar**.

Bal Kalyan Puraskar

- It is awarded to **individuals and organisations** that have made outstanding contributions in child development, child protection, or child welfare.
- **Eligibility:** It has two categories, for individuals and for institutions.
 - Three awards are given in each category.
 - In the individual category, Indian citizens who are 18 years old are nominated.
 - Institutions working within any field of **child welfare** are nominated for the institutions category.
- Instituted in 1979 as the National Child Welfare Awards.
- It was renamed in 2018 as **Bal Kalyan Puraskar**.

INDIA EMERGES AS LARGEST EXPORTERS OF CUCUMBER AND GHERKINS IN THE WORLD.

Gherkin:

- Gherkin is a term generally used to refer to a **savory pickled cucumber**.
- Gherkins and commercial cucumbers **belong to the same species** (*Cucumis sativus*), but are from different cultivar groups.
- They are cultivated exclusively on "**contract farming**" basis.

Cultivation:

- India has emerged as the **largest exporter of gherkins** in the world.

- Nearly **15%** production of the **world's gherkin** requirement is grown in **India**.
- **Karnataka, Tamil Nadu, Andhra Pradesh and Telangana** are the major gherkin producing states in India.

Export:

- Gherkins are exported under **two categories -- cucumbers and gherkins**, which are prepared and preserved by vinegar or acetic acid.
- India currently exports gherkins to **more than 20 countries**, with major destinations being North America, European countries and Oceanic countries.

NATIONAL MISSION ON INTERDISCIPLINARY CYBER PHYSICAL SYSTEMS (NM-ICPS)

New and emerging technologies are powering national initiatives in key areas across the country through the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS).

Technology Platforms Established Under the Mission:

ARTPARK at IISc Bangalore

- It is an **AI-driven platform** that helped Chest X-ray interpretation of images sent over social media during COVID-19.
- The solution **Xray Setu** is quick and easy to use and can work with low-resolution images sent via mobiles, facilitating detection in rural areas.

Remedial Action, Knowledge Skimming, and Holistic Analysis of COVID-19 (RAKSHAK)

- **Developed by:** IIT Bombay
- It is a **tapestry method** for screening COVID-19 under, supported by the Technology Innovation Hub (TIH) at IIT Jodhpur.
- It has led to the development of a new **chest X-ray based COVID diagnosis System**, Open Data for Indian and International COVID Cases – COVBASE.

Ambi-Tag

- **Developed by:** IIT Ropar Technology Innovation Hub – AwaDH.
- It is a first-of-its-kind **Internet of Things (IoT)** device.
- It monitors **ambient temperature** during the **transportation of vaccines**, medicines, blood samples, food and dairy products.

Consortium

- A **consortium** has been launched by **IIT-Madras** and other entrepreneurial start-up

companies under the mission - **Indian Space Technologies and Applications Consortium Design Bureau (I-STACDB)**.

- It will focus on building an end-to-end **Atmanirbhar ecosystem** for space technologies.

National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS):

- NM-ICPS was launched in 2018.
- **Implemented by:** Department of Science & Technology.
- It was launched for a period of five years.

Genesis:

- **Cyber Physical Systems (CPS)** and its associated technologies, like **artificial intelligence (AI)**, internet of things (IoT), **machine learning (ML)**, deep learning (DP), is playing a transformative role in all sectors.
- It has become imperative for government and industries to adopt these emerging technologies in order to improve the overall **quality of life and sustainability of the environment**.

The mission would develop and bring:

- CPS and associated technologies within reach in the country.
- **Adoption of CPS technologies** to address India specific National / Regional issues.
- Produce next generation **skilled manpower** in CPS.
- Catalyze translational research.
- **Accelerate entrepreneurship** and start-up ecosystem development in CPS.
- Give impetus to **advanced research in CPS**, technology development and higher education in science, technology and engineering disciplines.

- Place India at par with other advanced countries and derive **direct and indirect benefits**.

Impact:

- CPS technologies provide a cutting edge to a nation's scientific, engineering, and **technologically innovative capabilities**.
- The proposed mission would benefit **national initiatives** in health,

education, environment, agriculture, **Industry 4.0**, SMART Cities, Sustainable Development Goals (SDGs) etc.

- CPS will indeed bring a paradigm shift in entire skill sets requirement.
- Innovation, and Start-up Ecosystem is an integral part of the NM-ICPS.
- The start-ups will create a number of technologies driven job opportunities in CPS and allied areas.

NATIONAL GIRL CHILD DAY: KNOW ABOUT THE HISTORY & SIGNIFICANCE OF THE AUSPICIOUS DAY

Ever since 2008, the date of **January 24 is celebrated as the National Girl Child Day** in India every year.

Government Initiatives for Girl Child:

Beti Bachao Beti Padhao:

- It is a **tri-ministerial scheme** with the **Women and Child Development Ministry** as the **nodal ministry**.
- The other two ministries involved are **Health and Family Welfare** and **Education (Department of School Education and Literacy)**.
- It is a **100 percent Centrally Sponsored Scheme**.
- The programme is being implemented across **405 districts** in the country.

Objective:

- To **save** the child from social problems such as **gender-based abortions** and advance child education
- To **address sex selective abortion** and the **decline in Child Sex Ratio**.

- To endorse the **right of girls to inherit property**.

Sukanya Samridhi Yojana

- Sukanya Samridhi Yojana Account is a Government of India backed **savings scheme** designed for parents of girl children.

Objective:

- Allow parents to set up a trust for their child's eventual schooling and marriage expenses.
- All parents and guardians of girl children under the age of 10 can open this account.

Mukhyamantri Rajshri Yojana:

- The Mukhyamantri Rajshri Yojana was launched **in Rajasthan**.
- **Objective:** To offer monetary benefits to parents of girl children, starting from their birth till their higher education.

CBSE Udaan scheme

- The CBSE Udaan scheme for girls is **implemented by the Central Board of Secondary Education**, under the Ministry of Human Resources Development, Government of India.
- **Objective:** To increase the student enrolment of girls in prestigious engineering and technical colleges across India.

Challenges faced by Girl Child:

Sex Ratio:

- According to last census statistics, the child sex ratio of girls to boys (0-6 years) declined to **919 girls per 1,000 boys** from 927 girls per 1,000 boys in 2001.
- The adverse sex ratio is the culmination of a conservative way of thinking that households do not want to give birth to a

daughter and nurture her to achieve her abilities.

Social Discrimination:

- Even before the child is conceived, a 'Girl Child' faces discrimination.
- **Female infanticide** is a disturbing phenomenon in India, as low-cost abortion technology enables households to exercise their choice for boys over daughters.
- Right after birth, the infant faces **bigotry and injustice**.
- She is **not provided with adequate meals** compared to her male siblings; her education is not given much priority.
- And in many instances, parents want their sons to resume schooling, and wish their daughters to sit at home and do household work.

KAMLA BUILDING'S FIREFIGHTING SYSTEM WASN'T WORKING: MUMBAI FIRE BRIGADE

The firefighting system at the Tardeo's Kamla building, also known as Sachinam Heights building was not operational at the time of the fire, according to Mumbai's fire department officials.

Urban fire vulnerabilities

General Causes of Fires

- **Faulty appliances and leads:** Faulty equipment and weak wiring cause large number of fires in homes, offices and other establishments.
- **Faulty fuel supply/leak:** Leakage in gas/fuel supply lines cause fires which prove to be difficult to subdue.
- **Misuse of equipment or appliances:** Unattended cooking utensils, use of flammable materials for

interiors and furniture are major causes of fire outbreaks.

- **Human error/arson:** Human actions like smoking, negligent actions like overcharging and overheating of electrical appliances, lack of knowledge of correct procedures for use of flammable materials.
- **Unplanned urbanization:**
 - **The high density of urban settlements** resulting in narrow and constricted circulation spaces adds to the urban fire vulnerabilities.
 - **Tightly packed dwelling units in slums and squatter settlements** are high risk areas in cities.

Fire safety architecture in India

The National Building Code of India, 2016

- It covers the requirements for **fire prevention, life safety in relation to fire and fire protection of buildings.**
- It specifies:
 - The **demarcations of fire zones, restrictions on constructions of buildings** in each fire zone.
 - **Classifications of buildings based on occupancy**, types of building construction according to fire resistance of the **structural and non-structural components.**

Code broadly covers the following areas:

- **Fire prevention:**
 - This covers aspects of **fire prevention pertaining to the design and construction of buildings.**
 - It also describes the **various types of buildings materials and their fire rating.**
- **Life Safety:**

- This covers **life safety provisions** in the event of fire and similar emergencies.
- It addresses **construction and occupancy features** that are necessary to minimise danger to life from fire, smoke, fumes or panic.
- **Fire Protection:** Covers **significant appurtenances (accessories) and their related components** and guidelines for selecting the correct type of equipment and installations meant for fire protection of the building, depending upon the classifications and type of building.

Model Building Bye Laws, 2016

- **It was developed by Ministry of Housing and urban development.**
- **It Includes Prevention** measures against "Soft Storeys" in multi-storeyed buildings and Proof Checking of Structural Design for buildings.

NETAJI SUBHAS CHANDRA BOSE'S BIRTH ANNIVERSARY TO BE CELEBRATED AS PARAKRAM DIWAS ANNUALLY

Recently, the Central Government has decided to observe Subhas Chandra Bose's birth anniversary as 'Parakram Diwas'.

Subhash Chandra Bose:

- **Born on:** 23 January 1897, Cuttack
- He studied at **Presidency College, Calcutta** (Kolkata), from which he was expelled in 1916 for nationalist activities.
- He went **University of Cambridge** in England to prepare for the **Indian Civil Service.**
- In 1920 he passed the civil service examination, but he resigned his candidacy.

- He was highly influenced by **Vivekananda's teachings** and considered him as his spiritual Guru.
- His political guru was **Chittaranjan Das.**

Role in Politics:

- He participated in the **non-cooperation movement.**
- He was arrested for his political activities in 1924.
- He became a youth educator and commandant of the **Bengal Congress volunteers.**
- In 1924, he became the CEO of the **Calcutta Municipal Corporation.**

- In 1930 he was elected Mayor of Calcutta.
- He won the **Congress presidential election** at Haripura 1938.

Major Contributions:

- He was one of India's greatest freedom fighters.
- He started the newspaper '**Swaraj**'.
- He founded a new party '**The Forward Bloc**'.

- He organised the **Indian National Army** (INA) to fight the British and to liberate India with the help of Japan.
- He gave the famous slogans 'Jai Hind', 'Dilli Chalo' and "Give me blood and I will give you freedom".
- He also wrote the book '**The Indian Struggle**' which covers the details of Indian independence movement from 1920 to 1942.
- He died on 18th August 1945.

REVAMPED CGHS WEBSITE AND MOBILE APP LAUNCHED

Recently, Union Minister for Health and Family Welfare digitally launched the **revamped Central Government Health Scheme and mobile application**.

The launch of the **revamped CGHS website** linked with a mobile app is an important and timely step towards catering to **India's increasing digital penetration**.

- The website has several updated features which shall hugely **benefit more than 40 lakhs** beneficiaries with **real-time information** from the convenience of their homes.
- **Basket of services** is enlarged with the **revamped website**, which adds on a newly provided feature of **teleconsultation**.

ECI CELEBRATES 12TH NATIONAL VOTERS' DAY

The **National Voters' Day** is celebrated every year on January 25.

- The **first-ever** National Voters' Day was celebrated on **January 25, 2011**.

- **Objective:** To **encourage more young voters** to take part in the electoral process.
- The theme for National Voters' Day 2022 is '**Making Elections Inclusive, Accessible and Participative**'.

CONTROVERSY OVER TIPU SULTAN IN MUMBAI

Recently, Mysore King Tipu Sultan is at the centre of a controversy in Mumbai.

What is the Issue?

- The present controversy is over a playground located in the Muslim-dominated area of **Malwani** in the Western Suburb of Malad.

- Mumbai Suburban Minister is planning to name a playground in the Muslim-dominated area of Malad after **Tipu Sultan**.
- However, the protestors believe that naming a ground after Tipu Sulta is not fair as he was responsible for the deaths of a large number of Hindus.

Tipu sultan:

- **Tipu Sultan** was born in 1750, Devanhalli, India.
- He was also known as **sultan of Mysore**, who won various wars of the late 18th century in southern India.

Genesis:

- Tippu was instructed in **military tactics** by his father, **Hyder Ali**, who was the Muslim ruler of Mysore.
- He fought against the **Marathas** on several occasions between 1775 and 1779.
- During the **second Mysore War** he defeated Col. John Brathwaite on the banks of the Kollidam River in 1782).
- He succeeded his father in 1782.
- In 1784 concluded **peace with the British** and assumed the title of sultan of Mysore.
- In 1789, however, he provoked British invasion by attacking their ally, the raja of Travancore.
- By the **Treaty of Seringapatam** (March 1792) he had to cede half his dominions.
- The governor-general, **Lord Mornington** launched the fourth Mysore War (1798–99).

- **Seringapatam**, Tipu's capital, was stormed by British-led forces on May 4, 1799.
- He died on May 4, 1799.

His contributions:

- Introduced a number of administrative innovations during his rule, including **his coinage, and a new Mauludi lunisolar calendar**.
- Devised a **land revenue system** based on detailed surveys and classification, in which the tax was imposed directly on the peasant, and collected through salaried agents in cash, widening the state's resource base. This initiated the **growth of Mysore silk industry**.
- Modernised agriculture, gave tax breaks for developing wasteland, built irrigation infrastructure, and promoted sericulture.
- Built a navy to support trade, and commissioned a 'state commercial corporation' to set up factories.
 - He organised his army on based on the European model with Persian command.
 - He created a **Board of Admiralty in 1796**.
- As Mysore traded in **sandalwood, silk, spices, rice and sulphur**, some 30 trading outposts were established.
- Expanded the **iron-cased Mysorean rockets** and commissioned the military manual - **Fathul Mujahidin**.
- He was **considered a pioneer in the use of rocket artillery** as he deployed the rockets against advances of British forces and their allies in their 1792 and 1799 **Siege of capital Srirangapatnam in the Fourth Anglo-Mysore War**. However, he was killed in this battle.

GEN. RAWAT, KALYAN SINGH AWARDED PADMA VIBHUSHAN

Recently, India's first chief of defence staff General Bipin Rawat, former Uttar Pradesh chief minister Kalyan Singh were awarded with Padma Vibhushan, the country's second-highest civilian honour.

- Gita Press chairman Radheyshyam Khemka and renowned vocalist Prabha Atre were also honoured with the award.
- The government announced 128 **Padma awards** on the eve of **Republic Day**, including 17 Padma Bhushans and 107 Padma Shri honours.
- Thirty-four of the awardees were women.

Padma Awards:

- The Padma Awards are one of the **highest civilian honours** announced annually on the eve of Republic Day.
- It recognizes achievements in all fields of activities or disciplines where an element of public service is involved.
- The award is normally **not conferred posthumously**.
- However, in deserving cases, the Government could consider giving an award posthumously.
- The awards are presented by the **President of India** usually in the month of March/April every year where the awardees are presented a certificate signed by the President and a medallion.
- The recipients are also given a small **replica of the medallion**, which they can wear during any ceremonial/State functions etc.
- The names of the awardees are published in the **Gazette of India** on the day of the presentation ceremony.
- The total number of awards to be given in a year **should not be more than 120**.
- The award **does not amount to a title and cannot be used as a suffix or prefix** to the awardees' name.

History:

- Government of India instituted two civilian awards-**Bharat Ratna & Padma Vibhushan** in 1954.
- The latter had three classes namely Pahela Varg, Dusra Varg and Tisra Varg.
- These were subsequently renamed as **Padma Vibhushan, Padma Bhushan and Padma Shri** on January 8, 1955.
- **Padma Awards** is announced every year on the occasion of Republic Day except for brief interruptions during the years 1978 and 1979 and 1993 to 1997.

Categories:

The Awards are given in three categories:

- **Padma Vibhushan:** For exceptional and distinguished service.
- **Padma Bhushan:** Distinguished service of higher order.
- **Padma Shri:** Distinguished service.

Who is Eligible?

- All persons **without distinction of race**, occupation, position or sex are eligible for these awards.
- However, government servants including those working with PSUs, **except doctors and scientists**, are not eligible for these awards.
- The award seeks to recognize works of distinction and is given for exceptional achievements/service in all fields of activities/disciplines.

It includes:

- **Art** (music, painting, sculpture, photography, cinema, theatre etc.)

- Social work (social service, charitable service, contribution in community projects etc.)
- **Public Affairs** (law, public life, politics etc.)
- Science & Engineering (space engineering, nuclear science, information technology, research & development in science etc.)
- **Trade & Industry** (banking, economic activities, management, business etc.)
- Medicine (includes medical research, distinction/specialization in ayurveda, homeopathy, sidhha, allopathy, naturopathy etc.)
- Literature & Education (journalism, teaching, literature, poetry, promotion of literacy, education reforms etc.)
- **Civil Service** (distinction/excellence in administration etc. by Government servants)
- Sports (athletics, adventure, mountaineering, promotion of sports, yoga etc.)

- Others (fields not covered above and may include propagation of Indian culture, protection of human rights, wild life protection/conservation etc.)

How are the recipients selected?

- All nominations received for Padma Awards are placed before the **Padma Awards Committee**, which is constituted by the Prime Minister every year.
- The Committee is headed by the **Cabinet Secretary** and includes Home Secretary, Secretary to the President and four to six eminent persons as members.
- The recommendations of the committee are submitted to the **Prime Minister and the President of India** for approval.

DECOMMISSIONED WARSHIP INS KHUKRI TO BE TURNED INTO MUSEUM

Recently, decommissioned Indian naval ship (INS) Khukri was handed over to the Diu administration so that it can be developed as a full-scale museum.

INS Khukri:

- INS Khukri was laid down on 27 September 1985 at **Mazagon Dock Limited**.
- It was commissioned on 23 August 1989.
- It was the **first indigenously built missile corvette**.

- It was the lead vessel of her **class of corvettes**, in service with the Indian Navy.
- The ship was named after **INS Khukri**, the only Indian Navy ship ever lost in combat.
- The previous Khukri was sunk by two homing torpedoes strike by **PNS Hangor** during the 1971 **Indian-Pakistan war**.

REPUBLIC DAY: VIRAT, ELITE HORSE OF PRESIDENT'S BODYGUARD, RETIRES

Recently, one of the President's Bodyguards (PBG), an elite horse named Virat, who was retired from Indian Army received COAS commendation award.

COAS Commendation Card:

- It is awarded for **individual acts of gallantry**, distinguished service or devotion to duty performed either in operation or **non-operational areas** which are not sufficiently to qualify for a higher gallantry

award or for which the higher award is inappropriate.

Eligible Categories:

- **All ranks or the Army and civilian personnel** working under the supervision and control of the Army are eligible for the award.
- The award will not be made posthumously.

MEENAKSHI LEKHI RELEASES BOOK ON UNSUNG WOMEN HEROES OF FREEDOM STRUGGLE

Recently, Union Minister of State for Culture released a pictorial book on **India's Women Unsung Heroes of Freedom Struggle** as part of Azadi ka Mahotsav, in New Delhi.

Highlights

- The book celebrates the **lives of women** who led the charge and lit the flame

of protest and rebellion in the fight for freedom.

- It contains the **stories of queens** who battled colonial powers in the struggle against imperial rule and women who dedicated and even laid down their lives for the cause of the motherland.
- It has stories of **Rani Abbakka, Velu Nachiyar, Bishni Devi Shah, Accamma Cherian, Parbati Giri** etc.

GRASSROOTS INNOVATOR FROM KARNATAKA POPULAR AS TAMARIND MANIAC SELECTED FOR PADMA SHRI FOR 2022

Grassroots innovator, **Shri Abdul Khader Nadakattin**, popularly known as '**tamarind maniac**' is selected for Padma Shri for 2022.

Shri Abdul Khader Nadakattin

- Shri Abdul Khader Nadakattin is a **serial innovator** from Karnataka.
- His innovations include a device to separate tamarind seeds, ploughing blade manufacturing machine, Seed cum fertilizer

drill, Water-heating boiler, an Automatic sugarcane sowing driller, and a wheel tiller.

- Owing to his portfolio of **innovations related to tamarind**, people started calling him "hunase huccha", which means tamarind maniac.
- He successfully grew **tamarind with alkaline water**.
- He used **techniques for harvesting tamarind** from the tree and **developed a machine for slicing tamarind**.

REPUBLIC DAY: PRESIDENT APPROVES 384 GALLANTRY AWARDS FOR ARMED FORCES PERSONNEL; NEERAJ CHOPRA HONOURED WITH PVSM

Recently, The President of India has approved 384 Gallantry awardees on the eve of the 73rd Republic Day celebrations.

Gallantry Awards

- The President of India honours the country's military personnel for their show of gallantry and valour with a total of the following six awards.
- They are announced twice in a year on Republic Day and Independence Day.

Wartime gallantry awards

1. Param Vir Chakra

- It is India's highest military decoration.
- It is granted for "most conspicuous bravery in the presence of the enemy" on the land, sea, or in the air.

2. Mahavir Chakra

- It is second-highest military decoration in India.
- It is awarded for acts of conspicuous gallantry in the presence of the enemy, whether on land, at sea, or in the air.
- It replaced the British Distinguished Service Order.

3. Vir Chakra

- It is third in precedence in wartime gallantry awards.

- It is awarded for acts of bravery on land, air, or sea.

Peacetime gallantry awards

1. Ashoka Chakra

- It is India's highest peacetime military decoration.
- It is awarded for valour, courageous action, or self-sacrifice away from the battlefield.
- This award can be given to either military or civilian personnel.

2. Kirti Chakra

- It is Second in order of precedence of peacetime gallantry awards.
- It is awarded for conspicuous gallantry otherwise than in the face of the enemy.
- It may be awarded to military personnel, civilian citizens, police personnel including central para-military forces, and Railway Protection Force.
- It is Peacetime equivalent of the Maha Vir Chakra.

3. Shaurya Chakra

- Shaurya Chakra is awarded for gallantry otherwise than in the face of the enemy.
- It may be awarded to military personnel, civilian citizens, police personnel including central para-military forces, and Railway Protection Force.
- It is a Peacetime equivalent of the Vir Chakra.

PM PAYS TRIBUTES TO LALA LAJPAT RAI ON HIS JAYANTI

Recently, the Prime Minister of India has paid tributes to Lala Lajpat Rai on his Jayanti.

Lala Lajpat Rai (28 January 1865 - 17 November 1928)

- He was a veteran leader of the **Indian Nationalist Movement**.
- He was popularly known as **Punjab Kesari**.
- He was the prime protestor of Simon's commission headed by **Sir John Simon** to report on the political situation in India.

Education

- He had his initial education in Government Higher Secondary School, Rewari, Punjab province.
- In 1880, Lajpat Rai joined Government College at Lahore to study law.
- In 1892, he moved to **Lahore** to practice law before the **Lahore High Court**.

Organizations created by him:

- Early in life, he became a **follower of Dayanand Saraswati**, the founder of the Arya Samaj, and went on to become one of the society's leaders.
- He was also the founder of organizations like **Hisar Arya Samaj, Hisar Bar Council, National DAV managing Committee**.
- In 1885, he established the **Dayanand Anglo-Vedic School in Lahore**.
- He founded the **Indian Home Rule League of America** in New York City in 1917.

His contribution in Indian Freedom struggle

- Rai, Tilak, and Bipin Chandra Pal (called **Lal-Bal-Pal**) advocated the use of **Swadeshi**

goods and mass agitation in the aftermath of the controversial Partition of Bengal in 1905 by Lord Curzon.

- After Lajpat Rai along with Ajit Singh resisted the Punjab Colonisation Bill in **1907**, colonial authorities **deported Rai to Mandalay in Myanmar** without trial. But due to lack of evidence was allowed to return the same year.
- He was elected **President of the Kolkata Indian National Congress Session (1920)**, which saw the launch of Mahatma Gandhi's Non-cooperation Movement.
 - In the same year, representatives of trade unions established the **All-India Trade Union Congress (AITUC)** under the Chairmanship of Lala Lajpat Rai.
- In 1924, he openly advocated the partition of Punjab into Hindu and Muslim Provinces.

Views of Lala Lajpat Rai:

- He stressed the **need for unity in the Hindu society**.
 - That is why he was **actively associated with the Hindu Mahasabha**, which had leaders like Madan Mohan Malaviya.
- He sought **socio-cultural resurgence** through Hindi and Nagri script text-books on India's indigenous cultural heritage and protests against the British government's favouritism to non-Hindus.
- He crusaded for an **end to untouchability**.

His Works:

- He wrote extensively in **English and Urdu**.

His important works include: 'The Arya Samaj', 'Young India', 'England's Debt to India', 'Evolution of Japan', 'India's Will to Freedom', 'Message of the Bhagwad Gita', 'Political Future of India', 'Problem of

National Education in India', 'The Depressed Glasses', and the travelogue 'United States of America' etc.

COAL SECRETARY LAUNCHES KOYLA DARPAN PORTAL

Recently, minister launch koyla darpan.

- **Aim:** To share Key Performance Indicators related to the Coal Sector.

- The portal will have the **key performance indicators** related to Coal Production, Status of Coal Stock in Thermal Power Plants, Allocation of Blocks, Monitoring of Major Coal Mines and Coal Price.

MANSUKH MANDAVIYA LAUNCHES RESEARCH PORTAL OF NATIONAL INSTITUTE OF PHARMACEUTICAL EDUCATION AND RESEARCH

Union Minister for Chemicals and Fertilizers launched NIPER research portal.

- **Aim:** To disseminate the information about all the NIPERs and their research activities, patents filed and Publication information at one place so that industry and other stakeholders know about them.

NIPER

- **The National Institute of Pharmaceutical Education and Research,**

Hyderabad is an Indian public pharmaceutical research university.

- It is one of the seven schools under India's **Ministry of Chemicals and Fertilizers.**
- The institute offers **Masters and Doctoral** degrees in pharmaceutical sciences.
- As an Institute of **National Importance**, it plays a major role in human resource development for the Indian pharmaceutical industry

PM CONDOLES THE PASSING AWAY OF NOTED EDUCATIONIST BABA IQBAL SINGH JI

The Prime Minister has expressed deep grief over the passing away of noted educationist, Baba Iqbal Singh Ji.

Baba Iqbal Singh

- He was born in **1926 in Bharyal Lehri, Punjab.**

- He was an **Indian socio-spiritual** leader of the Sikh community.
- He was the Founder President of **the Kalgidhar Trust, The Kalgidhar Society and Baru Sahib.**
- He established **129 low-cost schools and two private universities.**

- He worked in the direction of **imparting education in the rural marginalised areas of North India.**
- He believed that **rural children are excluded from the mainstream** and cannot contribute to the nation's growth.

Awards

- In 2022, he was conferred with the **Padma Shri** by the Government of India for his contributions in the field of **social work.**
- In 2018 he was bestowed with **Shiromani Panth Rattan** (precious jewel of the Sikh community) by **Takht Sri Harmandir Ji Patna Sahib.**
- He was awarded the **Sikh Lifetime Achievement Award** in 2016.



CENTRE WILL GRANT STATEHOOD FOR THE UNION TERRITORY OF PUDUCHERRY, SAYS CM

Recently, Chief Minister of Puducherry has demanded the statehood for Puducherry.

Common reasons for demand of new state

- **Improper Utilisation** of the natural resources.
- **Linguistic and cultural difference** are among the primary regions of demand.
- **Lack of development** in some areas of existing state.

Issues Arising out from Creation of New States

- **Promote regionalism:** Creation of new states **promote regionalism** because these regions are the **particular community dominated** areas and this will promote monoculture.
- **Interstate water dispute:** India is already witnessing interstate water dispute in several states. Creating a new state will **further intensify the problem.**
- **Requirement of huge finance:** For creating a new state, huge amount of finance is required for the **infrastructure development.**
- **No or small change in the life of common man:** Creation of new state **only**

means the power shift but it is not necessary that new state empowers the grass root structure and solve the misery of common people.

Constitutional provisions for the formation of new state

New States in India are created under the provisions of Articles 2, 3 and 4 of the Indian Constitution.

- **Article 2 of the Constitution** of India vests in the **Indian Parliament the exclusive power to admit or establish new states** into the Indian Union on such terms and conditions as the Parliament may provide for.
- Under article 3 Parliament may by law:
 - Form a new state by **separation of territory from any state or by uniting two or more states or parts of states or by uniting any territory** to a part of any state;
 - **Increase** the area of any state;
 - **Diminish** the area of any State;

- **Alter the boundaries** of any state;
- **Alter the name** if any State.
- Article 4 of the Indian Constitution reflects a **mandatory direction to the Parliament** while framing a legislation under Article 2 and 3.

Puducherry

- **Capital:** Puducherry city.
- **Formation:** 1 November 1954. It got **Union territory status in 1962.**
- The **territories of French India** were completely transferred to the Republic of India on 1 November 1954.
- The Union Territory of Puducherry consists of four small unconnected districts:
 - **Puducherry district, Karaikal district** both are in **Tamil nadu and Yanam district** is in **andhar pradesh** on the Bay of Bengal.
 - **Mahé district is in Kerala** on the Laccadive Sea.

RAJASTHAN TO MINE LIGNITE FOR ENHANCED POWER GENERATION

Government of Rajasthan is preparing a road map for mining of lignite and installation of a new lignite-based thermal power plant in Bikaner.

What is Lignite?

- Lignite is a dark brown or **black coal** that formed from peat at shallow depths and temperatures lower than 100 °C.
- It is the **first product of coalification** and is intermediate between peat and subbituminous coal.
- It contains about 60 to 70 percent carbon and has a calorific value near 17 megajoules per kilogram.

Lignite in India:

- **Indian lignite deposits** occur in the **tertiary sediments** in the southern and western parts of peninsular shield.
- It includes states like Tamil Nadu, Puducherry, Kerala, Gujarat, Rajasthan and Jammu & Kashmir.

Coal:

- **Coal is a combustible black** or brownish-black **sedimentary rock** with a high amount of carbon and hydrocarbons.

- It is classified as a **non-renewable energy source** because it takes millions of years to form.
- It is the energy stored by plants that lived hundreds of millions of years ago in swampy forests.

Types of Coal:

Anthracite

- It is a hard, brittle, and **black lustrous coal**, often referred to as hard coal.
- It contains a high percentage of **fixed carbon** and a low percentage of volatile matter.

Bituminous

- **Bituminous coal** is a middle rank coal between subbituminous and anthracite.

- It usually has a **high heating value** and is used in electricity generation and steel making.

Subbituminous

- Subbituminous coal is **black in color** and is mainly dull (not shiny).
- It has low-to-moderate heating values and is mainly used in **electricity generation**.

Lignite

- **Lignite coal** or brown coal, is the lowest grade coal with the least concentration of carbon.
- It has a **low heating value** and a high moisture content and is mainly used in electricity generation.

INDIA'S OLD DAMS: GANDHI SAGAR IN MP NEEDS IMMEDIATE REPAIR, SAYS CAG REPORT

Recently, a new report on Gandhi Sagar Dam was released by the Comptroller and Auditor General of India (CAG).

- The report stated that **Gandhi Sagar Dam** requires immediate repair due to absence of regular checks, non-functional instruments and choked drains.
- Gandhi Sagar Dam is a masonry gravity dam on **Chambal River in the Mandsaur, district of Madhya Pradesh**.

Importance of dam maintenance?

- Indian dams are very **old** and built according to the rainfall pattern of the past decades.
- The **erratic rainfall** in recent years has left them **vulnerable**.

- Older dams pose greater **safety risks, cost higher** in terms of maintenance and have **declining functionality** due to sedimentation.
- Factors affecting dam maintenance includes **temperatures increase, significant changes in seasonal and annual rainfall patterns**.
- Climate change can accelerate the ageing of dams.

Challenges

- There is **no standardisation** in how dam failure analyses are conducted and reported.
- Dam failure analysis is done in India as part of Environment Impact Assessment (EIA) for projects requiring environmental clearance.

- Also, the guidelines developed by the CWC are **not legally binding**.
- There is a **lack of a risk-based decision-making system** for making decisions regarding feasibility, location and design of proposed dam.
- The **state dam safety organisation (SDSO)**, the department responsible for its maintenance, **did not comply with recommendations** by the Central Water Commission (CWC) and Dam Safety Inspection Panel (DSIP) on remedial measures.
- **Lack of a centralised repository** for information regarding dam failure events.

Dams in India

- In India, **large dams** are those dams higher than 15 meters or between 10-15 meters in height, that fulfil certain additional design conditions.
- Over 75% of the dams are more than 20 years old, and about 220 dams are more than 100 years old.
- Most of these large dams are in **Maharashtra (2394), Madhya Pradesh (906), and Gujarat (632)**.

Dam Safety legislations and authorities in India:

- The Central Government can legislate on matters related to the protection of the environment and safety of dams under the **Environment Protection Act, 1986**.
- The existing dam safety regulations are part of the **Environmental Impact Assessment (EIA)** notifications issued under the Environment Protection Act, 1986.

The Dam Safety Bill, 2019

- The Bill provides for the surveillance, inspection, operation, and maintenance of all specified dams across the country.

- It constitutes two national bodies:
 - **National Committee on Dam Safety (NCDS)**, whose functions include evolving policies and recommending regulations regarding dam safety standards.
 - **National Dam Safety Authority**, whose functions include
 - Implementing policies of the National Committee,
 - Providing technical assistance to **State Dam Safety Organisations (SDSOs)**, and
 - Resolving matters between SDSOs of states or between a SDSO and any dam owner in that state.
- It also constitutes two state bodies: **State Committee on Dam Safety**, and **State Dam Safety Organisation**.
 - These bodies will be responsible for the surveillance, inspection, and monitoring the operation and maintenance of dams within their jurisdiction.

Central Water Commission (CWC)

- **Central Dam Safety Organisation**, under the Central Water Commission (CWC), provides **technical assistance** to the Dam Owners, and maintains data on Dams.
- The CWC has issued guidelines for:
 - Dam Safety Procedures
 - Safety Inspection of Dams
 - Development and Implementation of Emergency Action Plan (EAP) for Dams
 - Standardised Data Book Format, Sample Checklist and Proforma for Periodical Inspection of Dams.

Recommendations:

- There is an urgent need to **institute mechanisms for regular sharing** of dam-related data between the states and the centre.

- The ultimate authority is in the respective states, as states are responsible for dam safety regulation.
- **A decommissioning policy** needs to be put in place for removing or reconstructing dams which cannot be repaired or upgraded.
- Ministry of Environment, Forest and Climate Change (**MoEF**) should set up a **database linking information** for cleared projects with the static dam-related information from Indian Space Research Organisation (ISRO)'s Water Resources Information System (WRIS).
- MoEF needs to **institute legally binding standards** for conducting and reporting dam failure analysis.
- **Dam failure analysis** needs to be a regular activity for all large dams.
- The methodology should be further refined to use the latest data from routine inspections and surveillance.
- **Inundation maps** should be a compulsory feature of dam failure analyses.
- The dam failure analysis without an inundation map, is of limited use to local officials in charge of mitigation work and emergency response.
- The CWC has developed detailed guidelines on dam failure analysis and preparation of inundation maps, including a component of consequence analysis.
- India needs to move towards **risk-based design standards** which can better balance safety and costs.
- There needs to be a **pan-India statutory framework** for reporting and recording dam failure events.

CENSUS FIRST PHASE, NPR DATA COLLECTION PUT OFF TILL SEPTEMBER

The first phase of the census and collection of details to update the National Population Register (NPR) have been postponed at least till September.

Census

- Census is the **method for reviewing the country's progress in the past decade**, monitoring the ongoing schemes of the government, and planning for the future.
- **Duration:** Census is conducted every 10 years in India.

Two phases of Census

House Listing or Housing Census:

- In this phase, **buildings and structures, residential, partly residential or non-residential**, (statistics on housing stock),

along with availability of basic amenities in each household and condition of human settlements are listed systematically.

- It helps in **assessment of housing deficit**, besides overall quality of dwellings and people living therein.

Population Enumeration:

- It follows the **Housing Census within a gap of six to eight months**.
- It counts each and every person in the country, Indian national, along with her/his individual particulars and information on social, cultural, demographic, economic and other aspects.

Key Features:

- The Indian Census is the **largest single source of a variety of statistical information on different characteristics of the people of India.**
- The responsibility of conducting the decennial Census rests with the **Office of the Registrar General and Census Commissioner, India** under Ministry of Home Affairs.
- Census data is taken by **visiting every household** and gathering particulars by asking questions and filling up census forms.
- The information collected during the process is **confidential**. This information is not even accessible to the courts of law.
- The forms are transported to data processing centers located in 15 cities across the country.
- Intelligent **Character Recognition Software (ICR)** is the technology that came

National Population Register (NPR)

in India in Census 2001 and has become the benchmark for censuses all around the globe.

Historical Background of Census

First Census:

- The first complete census of India was conducted in **1830** by **Henry Walter** in Dacca.
- In this census, the statistics of the population with sex, broad age group, and the houses with their amenities were collected.

Second Census:

- The second Census was conducted in **1836-37** by **Fort St. George** according to the government website of Census India.

MINT GRAPHITI

THE CITIZEN COUNT

<p>What is NPR? It is an identity database of residents. It does not offer the right to claim citizenship.</p>	<p>How is NPR different from Census? Census is a primary source of socioeconomic and demographic data, which is shared as aggregates.</p>
<p>Is privacy guaranteed under NPR? Privacy is not offered formally. The data covered under NPR is available for government use.</p>	<p>How will government use NPR? NPR will be used for identifying beneficiaries for welfare programmes, like in the case of Ujjwala.</p>
<p>Is NPR linked to NRC? The home minister says no. But a 2018-19 govt report says NPR is the first step towards the creation of NRC.</p>	<p>Does NPR have any links to CAA? No. CAA is meant to grant citizenship to non-Muslims fleeing Pakistan, Bangladesh and Afghanistan.</p>

₹12,695 cr Cost of conducting Census, updating NPR.

Feb 2021 Deadline for completing both the exercises.

- NPR is a register of usual residents of the country.
- Every usual resident of India must register in the NPR.
- It includes both Indian citizens as well as foreign citizens.

- **Objective:** To create a comprehensive identity database of every usual resident in the country.
- The first **National Population Register** was prepared in 2010 and updating this data was done during 2015 by conducting door to door survey.

SC NOTICE ON PLEA CHALLENGING INNER LINE PERMIT IN MANIPUR

Recently, Supreme Court sought the responses of the Centre and the Manipur government to a petition challenging the constitutional validity of the inner line permit (ILP) system.

Inner Line Permit system

- It is a document that allows an **Indian citizen** to visit or stay in a state that is protected under the ILP system.
- **Aim:** To prevent settlement of other Indian nationals in the States where ILP regime is prevalent, in order to **protect the indigenous or tribal population**.
- The system is in force in **North eastern states**- Arunachal Pradesh, Nagaland, Manipur and Mizoram. It is also mandatory for **Lakshadweep**.
 - No Indian citizen can visit any of these states unless he or she belongs to that state, nor can he or she overstay beyond the period specified in the ILP.
- An ILP is issued by the **state government** concerned.
- It can be obtained after applying either **online** or **physically**.

- It states the **dates of travel** and also specifies the particular areas in the state which the ILP holder can travel to.
- It can be issued for **travel purposes solely**. Visitors are **not allowed to purchase property** in these regions.

Background

- Under the **Bengal Eastern Frontier Regulation Act, 1873**, the British framed regulations restricting the entry and regulating the stay of **outsiders** in designated areas.
 - This was to protect the Crown's own **commercial interests** by preventing British subjects (Indians) from trading within these regions.
- In 1950, the Indian government replaced **British subjects** with **Citizen of India**.
- This was to address concerns about protecting the interests of the **indigenous people** from outsiders belonging to other Indian states.

NEW RECAST NORMS: SUGAR MILLS GET 2-YEAR STAY FOR LOANS TAKEN FROM SDF

Department of Food and Public Distribution issued guidelines to facilitate rehabilitation of financially

weak but economically viable sugar mills which have availed loans under the Sugar Development Fund Act, 1982.

Sugar Development Fund

- It was established in the year 1982 through an **act of Parliament**.
- **Aim:** To grant loans to the sugar mills for facilitating the rehabilitation and modernization production of anhydrous alcohol or ethanol and development of sugarcane.

Objective

The objective of the fund is to offer financial assistance to tackle problems like

- Low yield.
- Outdated machinery.
- Low consumption.
- Short crushing season of sugarcane crop.
- Cyclical nature of the sugar sector.

Under the Sugar Development Fund Act, 1982

- Modernization Cum Expansion of sugar factory.
- Cane Development.
- Bagasse based Co-generation power projects.
- Production of Anhydrous Alcohol or Ethanol from alcohol or molasses.
- Conversion of existing plant to Zero Liquid Discharge Plant.

Funding Pattern

- The loans carry a concessional **rate of interest** at the rate of 2% below the Bank Rate.
- Scheduled Bank or Financial Institution – 50% of the total project cost.
- Promoters' contribution – 10% of the total project cost.
- Sugar development fund component – 40% of the eligible project cost.

ROW ERUPTS OVER MOVE TO FREE TEMPLES FROM KARNATAKA GOVT'S CONTROL

Recently, the Karnataka chief minister proposed to introduce a new bill to free temples and Hindus religious institutions from state government control. Debate over secularism and freedom of religion has erupted again.

- Article 27 provides for Freedom from payment of taxes for promotion of any particular religion. But under Article 25(2), **government can charge fees** for providing economic, administrative, financial, political or other secular services.

Preamble:

- Preamble of Indian constitution says that **India is a secular nation**. The word "**Secular**" is added in preamble by **42nd constitutional amendment 1976**.
- It means, **state do not have any religion and do not promote any particular religion**.
- Unlike western approach, Indian secularism follow approach of "**Sarva Dharma Samabhav**".

Right to freedom of religion (Article 25-28):

- **Article 25:** Freedom of Conscience and free **Profession, Practice and Propagation of Religion.**
- Restrictions: Public order, morality and health and to the other provisions of the constitution.
- **Provision of Article 25(2):** State can make law for:
 - Regulating or restricting any **economic, financial, political or other secular activity** which may be associated with religious practice.
 - Providing for **social welfare and reform or the throwing open of Hindu religious** institutions of a public character to all classes and sections of Hindus. Here the Hindus includes the Sikh, Jaina or Buddhist religion.
- **Article 26:** Freedom to **manage religious affairs.**
- **Article 27:** Freedom as to payment of taxes for promotion of any particular religion.
- **Article 28:** Freedom from attending religious instruction in certain educational institutions.

Arguments in favour state's control over temples:

ENGLISH IS THE LANGUAGE IN HIGH COURT: GUJARAT HC

Recently, a division bench of the Gujarat High Court asked a journalist facing contempt of court proceedings to speak only in English as that was the language in the higher judiciary.

- **Article 348:** Language to be used in the Supreme Court, High Courts and for Acts, Bills, etc.
- **Article 348 (1):** It provides that all proceedings in the **Supreme Court** and **High court** shall be in **English Language** until Parliament by law otherwise provides.

- State led control will reduce corruption and malpractice in name of religion.
- Improved transparency and inclusive religious development, without any discrimination.

Arguments against state's control over temples:

- The **government must not run-on donation money of temples.**
- Temples are **matter of faith.** Government's intervention in faith **contrasts with the secular feature** of constitution.
- Under Article 26, constitution provides for freedom to manage religious affairs. But **government's intervention** in name of secular matters is imposing **barrier in free religious management.**
- India has multi-party system and politics of religion is common phenomena in India. **Patronization of single religion by the government is possible in name of secular interference,** benefiting only a single political party.

- **Article 348 (2):** The **Governor of the State** with the consent of the President, authorize the use of the Hindi or any other language used for official purpose of the State,
- In the proceedings of the High Court, decrees, judgments or orders passed by such High Courts shall be in English.
- **Section 7 of the Official Languages Act, 1963:** It provides the use of Hindi or official language of a State in addition to the English authorized with the **consent of the President of India,** Governor of the State for purpose of judgments etc.

UNIFORM CIVIL CODE: LEGISLATORS TO DECIDE POLICY, NOT COURT, CENTRE TELLS DELHI HC

The Central government has said the Uniform Civil Code (UCC) is a policy matter for the legislature to decide on and that the court cannot issue any direction.

Doctrine of separation of powers:

- The doctrine of separation of powers implies that each pillar of democracy performs separate functions and act as **separate entities**.
- The doctrine is a **part of the basic structure** of the Indian Constitution even though it is not specifically mentioned in its text.
- The **executive** is vested with the power to make policy decisions and implement laws.
- The **legislature** is empowered to issue enactments.
- It also reviews the functioning of the executive.
- The **judiciary** is responsible for adjudicating disputes.
- The judiciary exercises judicial review over executive and legislative action.

What is Uniform Civil Code (UCC)?

- The Uniform Civil Code (UCC) calls for the **formulation of one law** for India.
- It would be applicable to all religious communities in matters such as marriage, divorce, inheritance, adoption.
- The code comes under **Article 44** of the Constitution.
- It lays down that the state shall endeavour to **secure a Uniform Civil Code for the citizens** throughout the territory of India.

Article 44 important?

- The objective of Article 44 was to **address the discrimination against vulnerable groups** and **harmonise diverse cultural groups** across the country.
- The article on UCC was incorporated as a **Directive Principle**.
- It was added so that it would be fulfilled when the nation would be ready to accept it and the social acceptance to the UCC could be made.

Origin of Uniform Civil Code

- British government submitted its report in 1835 stressing the need for uniformity in the codification of Indian law.

Need of Uniform Civil code:

- It will **strengthen the ideals of 'secular democratic republic'** as enshrined in the Preamble.
- It will **codify the various personal laws** that are segregated at present on the basis of religious beliefs like the Hindu code bill, Shariat law, and others.
- It will **simplify the complex laws** around marriage ceremonies, inheritance, succession, adoptions making them one for all.
- The same civil law will then be applicable to all citizens irrespective of their faith.
- It will result in integration of India by bringing communities on the common platform on matters which are at present governed by diverse personal laws.

ESMA IN HARYANA AGAINST STRIKE

Haryana government has invoked the Essential Services Maintenance Act (ESMA) prohibiting any form of strike by any category of employees for the next six months in the state.

- This order is issued due to **protests by government hospital doctors** who went on **mass casual leave** and threatened to go on an **indefinite strike**.
- **Three demands of the doctors are** - Creating a specialist cadre for doctors, stopping the direct recruitment of senior medical officers (SMOs) and amending the post-graduate policy.

Essential Services Maintenance Act (ESMA)

- The ESMA is a law made by the Parliament of India under List No. 33 in **Concurrent List of 7th Schedule** of Constitution of India.
- It was established to **ensure the delivery of certain services**, which if obstructed would affect the normal life of the people.
- The government can invoke this act to **prohibit striking employees** from refusing to work in **certain essential services**.
- **Each state has a separate state Essential Services Maintenance Act** with slight variations from the central law in its provisions.

Essential services?

- Any service with respect to which the **Parliament has power to make laws** or the **government feels that its discontinuation** would affect the **maintenance of supplies and services** necessary for **sustaining life** is considered an essential service.

Services fall under it

- Services related to **public conservancy, sanitation, water supply, hospitals** or related with the **defence of the country**.
- Any establishment dealing with **production, supply or distribution of petroleum, coal, power, steel and fertilizers** also falls under this category.
- **Banking, Communication and transport services** and any government undertaking related to the **purchase and distribution of food grains**.

Actions can be taken against the employees?

- Persons who commence the strike as well as those who instigate it are **liable to disciplinary action, which may include dismissal**.
- Any **police officer** is empowered to **arrest the striking persons without a warrant**.
- **Persons participating in or instigating the strike** are punishable with **imprisonment**, which may extend to **one year or with fine or with both**.

'HYDERABAD DECLARATION' ON E-GOVERNANCE ADOPTED AFTER 2 DAYS OF INTENSIVE DELIBERATIONS

Ministry of Personnel, Public Grievances & Pensions and Ministry of Electronics & Information Technology and Government of Telangana organized the National Conference on e-Governance and adopted the Hyderabad declaration.

Objectives of Hyderabad declaration

- To bring citizens and government closer through **digital platforms**.
- Transform citizen services through **use of digital technologies like UPI, DigiLocker, UMANG, e Sign.**
- **Fast track the implementation of the national level public digital platforms** in key social sectors such as Health, Education, Agriculture, etc.
- **Make India the global hub for emerging technology** through creation of large pool

of skilled resources on futuristic technologies.

- **Foster a spirit of research and development** and process reengineering in ongoing government services.
- Foster **responsible use of emerging technology** such as Artificial Intelligence, Machine Learning, Blockchain, 5G, Augmented Reality, Virtual Reality, etc for **Social Empowerment**.
- **Ensure resilient Government Infrastructure** with robust technological solutions to withstand pandemic like disruptions.
- **Use technology for propagating end to end** service delivery without human interference to the citizen at the **grass root level**.

SC EXPANDS MEANING OF VULNERABLE WITNESSES, DIRECTS HCs TO SET UP VWDC COMMITTEES

Recently, Supreme Court (SC) expanded the definition of vulnerable witnesses.

New definition

- Earlier the **vulnerable witnesses** were limited to only child witnesses.
- Now vulnerable witnesses will also include:
 - Witnesses related to the **age-neutral victims of sexual assault**
 - Witnesses related **gender-neutral victims of sexual assault**
 - Witnesses **suffering from mental illness as defined in Mental Healthcare Act 2017**

- Witnesses with **threat perception and any speech or hearing-impaired individual**
- Witness **suffering from any other disability**, considered as vulnerable by concerned court.

Directions of Supreme Court (SC):

- All High Courts (HCs) must adopt and notify a **Vulnerable Witness Deposition Centre (VWDC) Scheme**. (One VWDC in each district).
- **Implementation (mechanism as prescribed by SC):**

- Concerned HC will give an estimate to SC about the additional requirement of manpower for the implementation of the VWDC scheme.
- SC has also made the Justice Gita Mittal committee for designing and implementing an All-India VWDC training program.
- Union Ministry of Women and Child Development will designate a nodal officer for coordinating the implementation.

Witness Protection in India:

Genesis:

- 14th Law Commission Report (1958), Malimath Committee on Criminal justice system (2003), 4th National Police Commission Report (1980) had recommended witness protection law.
- SC recommended it in the case of the State of Gujarat vs. Anirudh Singh (1997).
- The legislature failed to make law on Witness Protection. So, the SC launched a Witness Protection Scheme (WPS) in 2018.

Witness Protection Scheme (WPS):

- WPS provides for the safety and security of witnesses and his family, protection of identity, relocation, police patrolling, and all other necessary arrangements required for the protection of the Witness.

- It is implemented by the Union Home Ministry.

Process of WPS:

- A witness can apply to the competent authority in the district for protection under WPS.
- Competent authority:
 - It is the standing committee in each district headed by District and session judge.
 - Other members of the committee are the Head of the police in the district and the Head of the prosecution in the district (member secretary).
- The competent authority will analyze threat perceptions and provide for arrangements accordingly. These arrangements are limited to 3 months. Later, a renewal is required by the same process.
- WPS provides for categorization of the witnesses under 3 categories, namely witness A, witness B, witness C. This categorization is done on the basis of threat perception.
- Establishment of State Witness Protection Fund (SWPF) at state/UT level for implementation of this scheme.
- SWPF will receive money through budgetary allocations, fines imposed by courts, Corporate Social responsibility (CSR) etc.

FOR HOW LONG CAN AN MLA BE SUSPENDED? BEFORE SC, A QUESTION OF LAW AND THE CONSTITUTION

Recently, 12 Maharashtra MLAs have gone to Supreme Court against their year-long suspension from the Assembly.

Genesis:

- In 2020, 12 MLA from Maharashtra Legislative Assembly were **suspended for one year** for misbehaving with the presiding officer.

12 MLAs have challenged their suspension based on the grounds of:

- **Denial of the principles of natural justice**, and of **violation of laid-down procedure**.
- **Violation of their fundamental right to equality** before law under Article 14 of the Constitution
- **Misuse of Rule 53** of the Maharashtra Legislative Assembly Rules
 - As per Rule 53, the power to suspend can only be exercised by the Speaker, and it cannot be put to vote in a resolution as was done in this case.

Arguments by the Government:

- Counsel for Maharashtra argued that the **House had acted within its legislative competence**.
- Under Article 212, **courts do not have jurisdiction to inquire into the proceedings** of the legislature.
 - Article 212 (1): "The validity of any proceedings in the Legislature of a State shall not be called in question on the ground of any alleged irregularity of procedure".
 - Article also states that no officer or member of the Legislature shall be subject to the jurisdiction of any court in respect of the exercise by him of those powers.

- The state has also referred to **Article 194 on the powers and privileges of the House**:

- It argued that any member who transgresses these privileges can be suspended through the inherent powers of the House.
- It has denied that the **power to suspend a member** can be exercised only through **Rule 53** of the Assembly.

Supreme Court Verdict:

- The **House cannot suspend a member beyond 59 days**.
 - Suspension of the MLAs would amount to punishing the constituencies as a whole.
 - There was a statutory obligation to fill in a seat within six months.
- The bench said that the **basic structure of the constitution will be threatened** if the constituencies of the suspended MLAs remained unrepresented in the Assembly.
- The Bench referred to **Article 190 (4)** of the Constitution which says that:
 - if for a period of 60 days, a member of a House, without its permission, is absent from all meetings, the House may declare his or her seat vacant.

Rules on the length of suspension of a Member of Parliament?

- **Rules 373, 374, and 374A of the Rules of Procedure and Conduct of Business in Lok Sabha**:
 - It provides for the withdrawal of a member whose conduct is "grossly disorderly", and suspension of one who abuses the rules of the House or wilfully obstructs its business.
 - The **maximum suspension** as per these Rules is **for five consecutive sittings** or the remainder of the session, whichever is less.

- The **maximum suspension for Rajya Sabha** under **Rules 255 and 256** also does not exceed the remainder of the session.

PIYUSH GOYAL SUGGESTS 5-POINT REFORM AGENDA FOR FCI

Union Food Minister suggested a five-point reform agenda for the Food Corporation of India.

Key Suggestions

- Change the **public perception** of FCI from being inefficient & corrupt to dynamic, inclusive & honest.
- Focus on integrating **end-to-end** tech solutions right from procurement to delivery to achieve operational efficiency & leakage free, distribution, reduce response time, beneficiary tracking etc.
- Establish a **grievance redressal mechanism** to react rapidly to farmer/Farmer Producer Organisation in distress.
- Plan for modern infrastructure & logistics.
 - Upgrade warehouses to international standards.
 - Improve **storage capacity** for the growing need - power backup, CCTV, robust network facility.

- Adopt Global best practices to make India a **'Food hub'**.

Food Corporation of India (FCI)

- It was setup under the **Food Corporation's Act 1964**.
- **Aim:** For effective price support operations for safeguarding the interests of the farmers.
- The Central government extends **price support** for procurement of wheat, paddy and coarse grains through the FCI and state agencies.

Objective

- To provide farmers **remunerative prices**.
- To make food grains available at **reasonable prices**, particularly to vulnerable section of the society.
- To maintain **buffer stocks** as measure of Food Security.
- To intervene in market for **price stabilization**.

POWER MINISTRY CLEARS LEH-KAITHAL GREEN ENERGY TRANSMISSION CORRIDOR

Recently, the Power Ministry has cleared the proposal to lay power transmission link for evacuating renewable energy (RE) from Ladakh as part of the green energy corridor.

- The proposal allows for setting up of a 5-gigawatt (GW) transmission link from Pang (Leh) to Kaithal (Haryana).

Green Energy Corridor (GEC) scheme

- **GEC is an alternative transmission system** for renewable energy (RE) power projects.
- It will ensure that the **huge injection of electricity** into the national grid from energy sources such as solar and wind **does not threaten the grid.**
- The objective of the green energy corridor is:
 - to **evacuate approx. 20,000 MW of large-scale renewable power**
 - to **improve of the grid** in implementing states.
- The **transmission systems** will be created over a period of **five years.**
- The project is expected to **help India meet the climate commitments** it made at the COP-26 summit in Glasgow.

Phase I of the GEC:

- The first phase of the green energy corridor is under implementation in Andhra Pradesh, Gujarat, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu.
- It will help **supply around 24GW of renewable energy by 2022.**
- The first phase will add 9,700ckm of transmission lines and 22,600MVA capacity

of substations at an estimated cost of ₹10,141.68 crore.

- The first phase has enabled India to achieved its **nationally determined contributions target.**

Phase II of the GEC

- Green Energy Corridor phase II is targeted to be set up with a total estimated cost of Rs. 12, 031 crores.
 - Under this phase, 10,750 circuit kilometres of transmission lines and around 27,500 mega volt amperes transformation capacity of sub-stations will be added.
- The projects in this phase will aim to **strengthen the power transmission capacity** of state grids.
- It will **generate large direct & indirect employment** opportunities for both skilled and unskilled personnel in power and other related sectors.
- The Green Energy Corridor (GEC) scheme will help in **achieving the target of 450 GW installed RE capacity by 2030.**
- It will also contribute to the **long-term energy security** of the country and **promote ecologically sustainable growth** by reducing carbon footprint.

EXPLAINED: WHO ARE THE RAVIDASSIAS AND WHY ARE THEY POLITICALLY IMPORTANT IN PUNJAB?

Recently, the Punjab elections were postponed to allow Ravidassias to travel to Varanasi for Guru Ravidas Jayanti.

Ravidassias:

- The Ravidassias are a **Dalit community** of whom the bulk live in the Doaba region.

- The Ravidassia religion, also called **Ravidas Panth**, is a **religious sect of the Sikhism**, founded in the 14th century.
- A Ravidassia place of worship is called a **dera.**
 - Gradually, the **dera in Ballan** became the **largest dera of the Ravidassias.**
 - The places of worship contain the holy book **Amritbani Guru Ravidas Ji** which contains all the **hymns by Guru Ravidas.**

Guru Ravidas:

- He was an Indian **mystic poet-saint** of the **Bhakti movement**.
- He is the **founder of Ravidassia religion** during the 15th to 16th century CE.
- One of his famous disciples was the saint **Mirabai**.
- Ravidas Jayanti is celebrated **every year on 14th February**.

His Preachings:

- Philosophical values of Sant Ravidas include social justice, equality and fraternity, removal of social divisions of caste and gender, and promotion of unity in the pursuit of personal spiritual freedom.
- He envisaged a **society based on equality and free from any kind of discrimination**.
- He believed that a human soul is a particle of God and hence **rejected the idea that**

people considered lower caste cannot meet God.

- He believed that the **only way to meet God was to free the mind from the duality**.
- He named a city near Lahore- 'Be-gampura' where there is no place for any kind of grief or fear.

Literary Works:

- Ravidas's devotional Verses were included in the Sikh scriptures known as **Guru Granth Sahib**.
- The **Panch Vani text of the Dadupanthi tradition** within Hinduism also includes numerous poems of Guru Ravidas.
- In the Adi Granth, **forty of Ravidas's poems are included**.
- This compilation of poetry in Adi Granth responds to issues of dealing with conflict and tyranny, war and resolution, and willingness to dedicate one's life to the right cause.

NO 27% OBC QUOTA IN LOCAL BODY ELECTIONS WITHOUT TRIPLE TEST – APEX COURT

Recently, the Supreme Court declined to recall its month-old orders quashing 27% OBC quota in panchayat polls in Maharashtra and Madhya Pradesh.

The Supreme court verdict:

- It stated that **no state or Union territory can be permitted to hold local body elections with 27% reservation** for other backward classes (OBCs) without empirical data on the population and representation of OBCs.
- Currently, there is no provision to provide quotas to OBCs in local body elections, which only have seats set aside for scheduled castes

(SCs) and scheduled tribes (STs), apart from women.

- It clarified that **states cannot rely on OBC population**.
- All states and Union territories (UTs) will have to complete the exercise of gathering **empirical data**, which will then be examined by the dedicated state commissions.
- The purpose of determining the quantum of OBC quota in local body elections is reflected in the census conducted by the central government.
- It directed that the state election commission (SEC) will have to **notify all OBC seats as open category seats** for future elections to

local bodies if states and UTs fail to satisfy the triple conditions laid down by the top court.

Triple test:

Krishna Murthy vs. Union of India (2010): The constitution bench laid down a **triple test** for reserving seats in local body polls.

These are:

- Set up a **commission** to conduct rigorous empirical inquiry into nature and implications of the backwardness qua local bodies.
- **Specify the proportion of reservation** required to be provisioned local body wise in light of recommendations of the Commission, so as not to fall foul of overbreadth
- In any case such reservation shall not **exceed 50 per cent of the total seats** reserved in favour of SCs/STs/OBCs taken together.

THE DEBATE OVER MARITAL RAPE

Recently, the constitutionality of the 'marital rape immunity' provided for in the Indian Penal Code was challenged in Delhi High Court.

Provision of Marital rape:

Indian Penal Code:

- **Section 375** defines **rape and lists seven notions of consent** that, if vitiated, would constitute the offence of rape by a man.
- The provision **exempts** sexual intercourse or **sexual acts by a man with his own wife**, the wife not being under eighteen years of age, under the definition of rape.
- This exemption essentially allows a **marital right** to a "husband", who can with legal sanction exercise his right to consensual or non-consensual sex with his "wife".

Arguments against Marital rape:

- Marital rape immunity stands against the light of the:
 - **Right to equality** (Articles 14)

- **Right to life with dignity, personhood, sexual, and personal autonomy** (Article 19 and 21)
- It creates an **unreasonable classification** between married and unmarried women and, by corollary, **takes away the right** of a married woman to **give consent** to a sexual activity.

Flaws Behind the argument against criminalising marital rape:

- At the time of marriage, women give irrevocable consent to sexual intercourse with husbands.
- Legal recognition to marital rape will sabotage the institution of marriage.
- Women will weaponise this law against their husbands.
- Alternative legal remedies already exist.

J S Verma Committee:

Mandate:

- To look into criminal law reforms following the gangrape and murder of a 23-year-old in Delhi in 2012.

Recommendations:

- To remove the marital rape exception in light of India's obligations under the

Convention on the Elimination of All Forms of Discrimination Against Women.

- The committee quoted that **marriage should not be regarded as extinguishing the legal or sexual autonomy of the wife.**

GUJARAT HC'S 'JUSTICE CLOCK' AND OTHER DIGITAL INITIATIVES

Recently, two digital services- 'Justice Clock', and electronic payment of court fee were inaugurated for Gujarat High court.

What is the 'Justice Clock'?

- The Justice Clock, an LED display, will exhibit vital statistics of the justice delivery system in Gujarat.
- **Objective:** To "maximize outreach and visibility" of the work done by the state judiciary.

Online e-Courts fee system:

- It allows advocate and parties to procure judicial stamps online through electronic payment.
- The platform now stands expanded to all district and taluka courts.

Digitalization of Indian Legal system:

Virtual courts:

- The e-courts mission project, guided by the Supreme Court e-Committee as part of the National e-Governance Plan (NeGP), began the digitization of Indian courts.

- **Objective:** To create a more accessible, inexpensive, dependable, and transparent judicial system.
- The e-Courts initiative has so far been divided into three phases:

Phase I:

- It was primarily concerned with hardware installation, or the computerization of the courts
- **Objective:** To extend specialized services to litigants, advocates, and the judiciary by computerizing all district and subordinate courts.

Phase II:

- The main aim of Phase II was the betterment of software of the digital infrastructure.

Phase III:

- The implementation of Phase III is yet to begin.
- The primary goal is to establish an "ecosystem" model in which systems interact with one another.
- The document proposes a digital case registry, a database of case laws, intelligent scheduling, a digital case management

framework, e-filing, and open digital proceedings.

Online Legal Services:

- **Online platforms provide** basic legal services ranging from **trademark registration, registration, and execution of wills, leases, contracts.**

Benefits of digitalization:

- E-filing of cases
- Digitalization of court records
- Online court proceedings

Drawbacks:

- **Lack of digital education** among the help desks of court
- **Lack of motivation** among help desks to upgrade to a more advanced digital infrastructure
- Automation is still not common.

Road Ahead:

Setting up a national policy:

- Develop a policy that encourages the establishment of more skilled help desks.
- It is vital to have a well-defined and pre-determined policy framework since it will aid in the development of a definite roadmap and direction for India's e-courts system.

The need for a better infrastructure:

- The government must identify and create the necessary infrastructure for a better functioning automated help desk service.

Organizing training programs:

- To manage all of the e-data, the government must invest significant resources in workforce training.
- These include keeping accurate records of notification, summons, warrants, bail orders, order copies, e-filing, and other similar activities for future reference.

Spreading awareness:

Increasing awareness of e-Courts through speeches and seminars can help bring the benefits and convenience that e-Courts can provide in the limelight.

DHARAM SANSAD HATE SPEECH CASE: HARIDWAR CJM COURT REJECTS NARASINGHANAND'S BAIL PLEA

Chief Judicial Magistrate (CJM) court in Haridwar denied bail for a priest and one other person.

- These were arrested for **hate speech** during "Dharam Sansad" in Haridwar and for making **derogatory remarks against women** of a particular community.
- Speakers, in event organized in Delhi, called for the "genocide of members" of a community.

Convention on the Prevention and Punishment of the Crime of Genocide

- It is an **international treaty that criminalizes genocide** and to enforce its prohibition.
- It was conceived largely **in response to World War II**, which saw atrocities such as

- the Holocaust that lacked an adequate description or legal definition.
- It was the **first legal instrument** to codify genocide as a crime, and the **first human rights treaty unanimously adopted by the United Nations General Assembly**, in 1948.
 - The Convention entered into force in January 1951 and has 152 state parties.
 - **India ratified the convention in 1959.**
 - **Article 2 of the Convention defines** genocide as any of the following acts committed with **intent to destroy, in whole or in part, a national, ethnic, racial or religious group**, as such:
 - **Killing members** of the group
 - Causing **serious bodily or mental harm** to members of the group
 - **Deliberately inflicting** on the group **conditions of life** calculated to bring about its physical destruction in whole or in part
 - Imposing measures intended to **prevent births within the group**
 - Forcibly **transferring children of the group to another group.**
 - **Article 3 defines the crimes** that can be punished under the convention:

- **Genocide**
- **Conspiracy to commit genocide**
- Direct and public **incitement to commit genocide**
- Attempt to commit genocide
- Complicity in genocide.
- **Article 4 states** that punishments are to be **awarded to guilty persons** irrespective of their official positions and to both public and private individuals.

Immunity from prosecutions

- Persons charged with **genocide** enumerated in article III shall be tried by a **competent tribunal of the State** in the territory of which the act was committed, or by **international penal tribunal** as may **have jurisdiction with respect to those Contracting Parties** which shall have accepted its jurisdiction.
- Any Party **may call** upon the **competent organs of the United Nations** to take such action under the **Charter of the United Nations** for the **prevention and suppression of acts of genocide** or any of the other acts enumerated in article III.

WHY THE CENTRE'S PROPOSED AMENDMENTS TO IAS CADRE RULES ARE DRAWING FLAK

Recently, the Central government has proposed amendments to the Indian Administrative Services (Cadre) Rules.

Issue:

- The amendment is being done **to exercise greater control in the central deputation** of Indian Administrative Services (IAS) officials.
- Deputation of IAS officials has been a **long point of tussle between the Centre and the states.**
- **Department of Personnel and Training** said that:
 - Many state/joint cadres are **not sponsoring an adequate number of officers** for central deputation, as part of the Central Deputation Reserve.
 - As a result of this, the number of officers **available for central deputation**

is not sufficient to meet the requirement at the Centre.

What is Deputation?

- Literally, **Deputation means the act of appointing a Deputy.**
- In a job role, especially in a government job, Deputation means service outside the cadre or originating/ parent department, for a temporary period.
- It is **done with aim of training officials.**
- During deputation, officers are also **outside the direct line of promotion.**
- After deputation, 1st posting is done.
- In the beginning, an IAS officers receive district training with their home cadres followed by their first posting.
- Mostly, new trainees are appointed as Sub-Divisional Magistrate (SDM) for the Deputation period.
- The Union government asks every year for an “offer list” of officers of the All India Services (IAS, IPS and Indian Forest Service) willing to go on central deputation.

Current rule on deputation:

- Currently, the central deputation in the IAS is covered under **Rule-6 (1) of the IAS**

(Cadre) Rules, 1954. It was amended in 1969.

- It states that: A cadre officer may, with the concurrence of the State Governments concerned and the Central Government, be deputed for service under the Central Government or another State Government or under a company, association or body of individuals, whether incorporated or not, which is wholly or substantially owned or controlled by the Central Government or by another State Government.
- It also says that “Provided that **in case of any disagreement, the matter shall be decided by the Central Government** and the State Government or State Governments concerned shall give effect to the decision of the Central Government”.

Proposed amendment:

- In case of any disagreement between the Centre-State or State Governments concerned, the decision of the Central Government will prevail.
- The **proposed amendment adds the words “within a specified time”.**
- In some specific situations, where **Central Government needs IAS officers in the public interest, the Central Government may seek them from states.**

AMIT SHAH LAUNCHES DISTRICT GOOD GOVERNANCE INDEX IN 20 DISTRICTS OF JK

Recently, the Union Home Minister launched the District Good Governance Index (DGGI) in Jammu and Kashmir.

About the Index:

- It was launched for 20 districts of **Jammu and Kashmir.**

- **Prepared by:** The Department of Administrative Reforms and Public Grievances (DARPG)
- Under this, policies, schemes and programs of the **central as well as the state governments** have been monitored at the district level.

Significance:

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- It will provide a robust framework for **evidence-based assessment** of the performance of all the districts in Jammu and Kashmir.
- The index will expand to other states and a **good governance competition** will start in every district of the country.
- It will work towards **improving the district machinery**, make districts result-oriented and improving the delivery mechanism.

Key Highlights of the Index:

- **Jammu** has topped the composite ranking, followed by Doda and Samba districts.
- Among 10 districts of Kashmir Valley, **Pulwama** has emerged as top

performer in governance, ranking fourth in DGGI for J&K.

- **Srinagar** has bagged fifth rank.
- Kupwara has bagged **10th slot** in DGGI.
- Among all the districts, **Rajouri** stood at the bottom of the ranking.

Achievement in National Good Governance Index (GGI):

- In GGI, J&K saw an increase of 3.7% in **Good Governance Indicators** from 2019 to 2021.
- The performance was noted in the fields of **commerce and industry**, agriculture, judiciary and **public infrastructure**.
- Government of India launched the **Good Governance Index 2021** on the occasion of the Good Governance Day (25th December).

PROMISES MADE BY MODI, KHATTAR UNFULFILLED, ANGANWADI WORKERS CONTINUE STRIKE IN GURGAON

Recently, thousands of anganwadi workers and helpers are on strike in Haryana demanding an increase in their allowance.

What is Anganwadi

- It is a type of rural **child care centre** in India.
- They were started by the Indian government in 1975 as part of the Integrated Child Development Services program to combat child hunger and malnutrition.
- Anganwadi means "**courtyard shelter**" in Hindi.

Role and responsibilities of Anganwadi workers

- To elicit **community support** and participation in running the programme.

- To carry out a **quick survey** of all the families, especially mothers and children in those families in their respective area of work once in a year.
- To make home visits for **educating parents** to enable mothers to plan an effective role in the child's growth and development with special emphasis on new born child.
- To assist in the implementation of **health component** of the programme viz. immunisation, health check-up, ante natal and post-natal check etc.
- To bring to the notice of the **Supervisors** any development in the village which requires their attention and intervention, particularly in regard to the work of the coordinating arrangements with different departments.

- To maintain **cooperation** with other institutions and involve lady school teachers and girls of the primary/middle schools in the village which have relevance to her functions.

- To identify the **disability** among children during her home visits and refer the case immediately to the District Disability Rehabilitation Centre.

SUPREME COURT ISSUES NOTICE TO CENTRE, ELECTION COMMISSION ON PLEA AGAINST FREEBIES

Supreme Court issued notice on a plea seeking directions to Election Commission (EC) to frame guidelines to stop political parties from promising or distributing "irrational freebies from public fund".

In Favour of Freebies:

Helps Lesser Developed Society:

- In states with comparatively lower level of development and prevalence of poverty, **need based freebies** can become a **source of their development** and usher growth.

Against Freebies:

Irreversible Public Debt:

- An increase in **subsidies on non-merit goods** such as freebies is going to make the **fiscal deficit** of any government unsustainable.
- The freebies are **funded from the state exchequer** and eventually puts it into **disarray**.

Danger to Democracy:

- Rational debates** that should happen, **does not happen** in case of distribution of last-minute freebies as it is done in a haste without legislative debate.

- Freebies of any kind, undoubtedly, influences all people. It **shakes the root of free and fair elections** to a large degree.

Balaji vs Government of Tamil Nadu and Others (2013):

SC's argument in favour of election freebies:

- The Supreme Court **upheld the distribution of freebies** and it also held that it does **not** amount to a corrupt practice.
- If the candidate of a political party promises the same gift, it would not be so, because that promise was not made by him, but the inducement comes from the party.
- The court said that the freebies were administered through district collectors and there were sufficient checks, because government expenditure is subjected to audit by the CAG.

SC's argument against freebies:

- If an **independent candidate** wants to give **freebies**, it would be a **corrupt practice**.

Road Ahead:

- There is a need to make the **bureaucracy and police independent**.
- There is also a need to create a **statutory, independent police commission**, along

the lines of the election commission, to supervise crime investigation and prosecution.

- Currently, political funding is opaque and non-transparent, and at times is linked to corruption.

- Political funding is mobilised by looting the exchequer and by selling patronage.
- To **improve governance** there is a need to undertake judicial reforms too, to ensure that cases do not go on and on for many years.

INTEGRITY PACT: CVC MODIFIES CRITERIA FOR NOMINATION OF INDEPENDENT EXTERNAL MONITORS

The Central Vigilance Commission (CVC) has revised the Standard Operating Procedure (SOP) for adopting and implementing the Integrity Pact.

- **Integrity Pact (IP)** is meant to **prevent corruption in public procurement**.
- It envisages an agreement between the prospective vendors and the buyer, not to resort to any corrupt practices in any stage of the contract.

Key Changes

- Independent External Monitors (IEMs), can only be considered from a **panel of eminent persons/officers** who have held the post of additional secretary or equivalent or higher pay scale in the government of India at the time of retirement.
- Independent external monitors (IEMs) play a key role in **resolving issues** raised by any party regarding any aspect of a tender.
- They are appointed by **the apex vigilance body** to look into issues relating to execution of contract and any irregularities.

Central Vigilance Commission

- It is an Indian governmental body set up in 1964, to prevent the governmental corruption.

- It was set up based on the recommendations of **K. Santhanam**.
- In 2003, the Parliament enacted a law conferring **statutory status** on the CVC.
- CVC is an **apex vigilance institution** which monitors all vigilance activity under the central government.
- The Commission shall consist of:
 - A Central Vigilance Commissioner - Chairperson;
 - Not more than two Vigilance Commissioners - Members

Functions of CVC

- To **inquire** or cause an inquiry or investigation to be conducted on a reference made by the Central government.
- To **exercise** superintendence over the vigilance administration in the ministries.
- To **review** the progress of applications pending with the competent authorities for sanction of prosecution under the Prevention of Corruption Act, 1988.
- It **advises** various authorities in central government organizations in planning, executing, reviewing and reforming their vigilance work.

APPROVAL REFLECTS INDIA'S PROACTIVE AND AGILE COVID19 MANAGEMENT

Recently, Drugs Controller General of India granted conditional market authorization to Covishield and Covaxin- Covid-19 vaccines for the country's adult population.

Conditional Market Authorisation (CMA)?

- It is the approval of a medicine that addresses unmet medical needs of patients on the basis of less comprehensive data than normally required.
- It is kind of **upgradation of emergency use authorisation (EUA)** and largely represents a regulatory endorsement of the safety doses.

CMA in India

- Since 2021, the two vaccines have been available under **Emergency Use Authorisation (EUA)** - Covishield and Bharat Biotech's Covaxin.
- Through the EUA route, the vaccines are available **only in emergency**

situations (i.e., public health emergency like the pandemic).

- Since the two vaccines now meet the high standards of safety, effectiveness, quality of the **Drugs and Cosmetics Act, 1940**, they have been now upgraded to conditional market authorization.

There are 4 criteria for granting **conditional marketing authorization**:

1. The **benefit-risk balance** of the vaccine is positive.
2. It is likely that the applicant will be able to provide comprehensive data post-authorization.
3. The vaccine fulfills an unmet **medical need**.

The benefit of the immediate **availability of the vaccine** to patients is greater than the risk inherent in non-availability of additional data.

EXTERNMENT IS NOT AN ORDINARY MEASURE: MUST BE RESORTED TO SPARINGLY AND IN EXTRAORDINARY CIRCUMSTANCES: SC

The Supreme Court observed that externment is not an ordinary measure and it must be resorted to in extraordinary circumstances.

Genesis:

- Appellant challenged an order of externment passed under **Maharashtra Police Act**, which had been upheld by the Bombay High Court.

What is externment?

- The word 'extern' is derived from the Latin root 'externus', meaning **outward**.

- It is a method of **controlling crime**, where unwanted elements are banished from a certain geographical area.
- Police and governments have long used externment as a **method of 'peacekeeping'**.

Example:

- An order of externment passed under provisions of **Section 56 of the Maharashtra Police 1951 Act** imposes a **restraint on the person**, from entering a particular area.
- The Act allows for the government to **take preventive measures** to detain or extern

those members of society whom they deem to potentially pose a threat or could cause a disturbance to the peace of society.

Supreme Court verdict:

- Order of externment **infringes the fundamental right** guaranteed under Article 19(1)(d).
- It is against the **right to livelihood**.
- It **prevents the person from staying in his own house** along with his family members during the period the order is in force.
- It **should not exceed two years** and that too only after due application of mind by the competent authority.

Article 19(1)(d)-Freedom to move freely throughout the territory of India

- It provides citizens a **fundamental right** to move freely throughout the territory of India.
- It guarantees to its citizens the **right to go wherever they like** in Indian territory without any kind of restriction whatsoever.
- They can move not merely from one State to another but from one place to another within the same State.

Grounds of Restrictions – The State may under clause (5) of Article 19 impose reasonable restriction on the freedom of movement on two grounds:

- In the **interests of general public**
- For the protection of the **interest of Scheduled Tribes**

SC, ST QUOTA IN PROMOTIONS: SUPREME COURT REFUSES TO LAY DOWN YARDSTICK, SAYS STATES OBLIGATED TO COLLECT DATA

A three-judge bench said that states are obligated to collect data on the inadequacy of representation of SCs/STs.

Highlights of Supreme court ruling

- It **cannot lay down any yardstick** for determining inadequacy of their **“representation”** in public employment.
- In the past, it had **refused to lay down any yardstick and had left it to states** to determine the factors relevant for deciding adequate representation.
- It said before **providing for reservation in promotions to a cadre**, the State is obligated to collect quantifiable data regarding inadequacy of representation of SCs and STs.
- It held that **“cadre”** should be the **unit for the purpose of collection of quantifiable data** in relation to promotional posts.

- The exercise of collection of information **cannot be with reference to the entire service or ‘class’/‘group’**, but it should be relatable to the grade/category of post to which promotion is sought.
- It said that there should be **review of the data collected and period of review** should be **“reasonable”**.

Supreme court judgements

B.K. Pavithra case

- Supreme court upheld the **validity of the 2018 Reservation Act** that introduced consequential seniority for SC/STs in Karnataka public employment.
- It held that the conclusion of the court approving the collection of data on the basis of groups and not cadres is contrary to the

law laid down in Nagaraj and Jarnail Singh judgments.

Indra Sawhney Case vs Union of India 1992

- SC upheld the **government order**, being of the opinion that **caste was an acceptable indicator of backwardness**.
- It said **Article 16(4)** of the Constitution of India **does not provide for reservation** in the matter of promotions.
- It also stated that **27% central government reservation for OBCs is valid**.

M Nagaraj Case 2006

- SC upheld the **Constitutional amendments** by which **Articles 16 (4A) and 16 (4B)** were inserted, saying they flow from Article 16 (4) and do not alter its structure.
- **Article 16 (4A)** empowers the State to **make provisions for reservation** in matters of **promotion to SC/ST**

employees if it feels they are not adequately represented in services, and

- **Article 16 (4B)** enables the State to **carry forward the unfilled SC/ST quota of a particular year** without clubbing it with the regular vacancies of the year to which it is carried forward to.
- It laid down **three conditions for promotion of SCs and STs** in public employment.
 - **Backwardness**
 - **Inadequate representation**
 - **Maintenance of administrative efficiency**.

Jarnail Singh Case 2018

- It **modified the Nagaraj judgment** to the extent and stated that:
 - States **need not to produce quantifiable data** to prove the **“backwardness”** of a Scheduled Caste/Scheduled Tribe community in order to provide quota in promotion in public employment.

DHANBAD JUDGE DEATH PROBE: EXPLAIN WHY 2 BRAIN PROFILING TESTS ON ACCUSED, HC TELLS CBI

Recently, High court monitoring **Dhanbad judge death probe** has pulled up the CBI for conducting brain fingerprinting tests on the two accused twice.

Brain fingerprint test

- Brain fingerprinting is an objective, scientific method to **detect concealed information stored in the brain**.
- It is also known as **Brain Electrical Oscillation Signature Profiling (BEOSP)**.
- It is a technique which uses **electroencephalograph**.

Execution of Brain Fingerprint

- It is done by measuring **electroencephalographic (EEG)** brain responses or **brainwaves**, non-invasively by sensors placed on the scalp.
- Test is conducted to study the **electrical behaviour of the human brain**.
- Under this test, the **consent of the accused is first taken** and they are then made to wear caps with dozens of electrodes attached to them.
- During the test, suspect is showed visuals or audio clips related to the case to check if there is any triggering of neurons (**P300-MERMER**) in the brain of suspect that generates brain waves.

Role in Criminal Proceedings:

The application of **Brain Fingerprinting testing** in a criminal case involves four phases:

- **Investigation** is undertaken by a **skilled investigator**.

- **Interview** conducted by an interviewer who may be an **investigator or a scientist**.
- **Scientific testing** is conducted by an experienced scientist. Of the four phases, only this one is in the **domain of science**.
- **Adjudication** is conducted by a **judge and jury**.



TRAIN18 ENGINEER ALLEGES CONSPIRACY AGAINST HIM

Recently, an engineer was involved in **making of Train18** has written to the Railway Board alleging about a malicious marketing campaign was on within the final two years to destroy his profession.

Vande Bharat Express

- The **Vande Bharat Express** is also known as **Train 18**.
- It is an India's first **semi-high-speed train**.
- It is an **EMU (Electric multiple unit) train** which was designed and manufactured

by **Integral Coach Factory (ICF)** at **Perambur, Chennai**.

- The train is manufactured under the Indian government's Make in India initiative, **over a span of 18 months**.
- **Key features include** GPIS-based passenger information system, bio-vacuum toilets, rotational seats, All air-conditioned chair car, Protection for underslung equipment from floods, centralized coach monitoring system, Disaster lights in case of failure of lights etc.

TWO NEW PLANT SPECIES DISCOVERED IN GHATS

Recently, Researchers have reported two new plant species from the biodiversity-rich Western Ghats regions in Thiruvananthapuram and Wayanad districts.

Fimbristylis sunilii

- It is a new species of **Cyperaceae**, from the Western Ghats of Kerala, Southwest India.
- It stands 20-59 cm tall and was collected from an elevation of 1,100 meters.

Neanotis prabhui

- It is a prostrate perennial herb.
- It hails from the family Rubiaceae and grows on **high-altitude grasslands**.
- It grows up to 70 cm in length and is many-flowered with the **petals pale pink in color**.

BREAKTHROUGH IN BATTERY TECH

California-based **QuantumScape Corp** has come up with a **novel solid state battery technology** that could offer a safer, cheaper alternative to lithium-ion batteries.

Solid State Batteries:

- Solid-state lithium-metal battery **replaces the polymer separator** used in conventional lithium-ion batteries **with a solid-state separator**.
- The replacement of the separator **enables the use of a lithium-metal anode** in place of the traditional carbon/graphite anode.
 - Solid state separator technology will **eliminate the side reaction** between the **liquid electrolyte and the carbon/graphite in the anode** of conventional lithium-ion cells.

Need for new technology:

- Lithium batteries suffer from issues such as **long charging times and weak energy density**.
- Lithium-ion batteries **lack the range** that would make Electric Vehicles (EV) a viable alternative to internal combustion engines.

- Lithium metal is **extremely reactive**.
 - In current lithium-ion batteries, in which the electrolyte is a flammable liquid, dendrite formation **can trigger a fire**.

Advantages of Solid -State Battery:

- Higher cell energy density
- Lower charge time
- Ability to undertake more charging cycles
- A longer life
- Improved safety.

India's Battery Push:

- The central government is working on a blueprint for a project of around 4,000 MWh of **grid-scale battery storage system** at the regional load dispatch centres.
 - It aims to primarily to **balance the vagaries of renewable generation**.
- **State-owned NTPC Ltd** (National Thermal Power Corporation Limited) has floated a global tender for a **grid-scale battery storage project**.
- The **Ministry of Heavy Industries** issued a request for **proposal** for setting up manufacturing facilities for **Advanced**

Chemistry Cell (ACC) battery storage in India.

THE SHELF LIFE OF COVID-19 VACCINES

Recently, concerns were raised about expired Covaxin being administered to 15-18 age group.

Shelf life of vaccine

- Vaccines are **complex mixtures** of proteins, carbohydrates, lipids, inactivated virus, or adjuvants.
- They are substances that are intended to enhance **immune response** and subsequent clinical efficacy of the vaccine.
- These together contribute to overall vaccine efficacy and safety.
- Like other medicinal products, vaccines come with a **date of expiry** and **shelf life** determined by the manufacturer and approved by regulatory authorities.
- The constituents of a vaccine can go bad over time because of **slow chemical reactions** and **lose efficacy**.

Stability of vaccine

- According to the **World Health Organization (WHO)**, stability is the **ability** of a vaccine to retain its chemical, physical, microbiological and biological properties within specified limits throughout its shelf life.

- There are **three specific objectives** of stability studies, which differ throughout a vaccine's lifetime.
 - First, it is conducted to determine shelf life and storage conditions.
 - Second, the stability studies, monitor vaccine stability in the post-licensure period, that is, when the vaccine is marketed commercially.
 - Third, according to the WHO guidelines, stability studies are conducted to support manufacturing changes by demonstrating comparability of product manufactured by different processes.

Shelf-life calculation

- Shelf life is calculated by storing the product at **different temperatures** for various lengths of time and then testing its effectiveness.
- According to the **WHO guidelines**
 - The shelf life of a vaccine is the period of time during which the vaccine, if stored correctly, is expected to comply with the specification, as determined by stability studies on a number of batches of the product.

The **shelf life** is used to establish the expiry date of each batch.

BIOENERGY CROPS CREATE COOLING EFFECT ON CULTIVATED AREAS: STUDY

A recent study has found that the global air temperatures decrease after years of large-scale bio energy crop cultivation.

Highlights:

- Global air **temperature decreases** by 0.03~0.08 °C, after 50 years of large-scale bio-energy crop cultivation.
- **Eucalypt is superior** to switchgrass in **cooling** the lands biophysically.

Bio Energy Crops:

- Bioenergy crops are defined as any **plant material used to produce bioenergy**.
- These crops have the capacity to produce **large volume of biomass, high energy potential**, and can be grown in **marginal soils**.
- **Switchgrass, elephant grass, poplar, willow, mesquite**, etc. are some examples of bio energy crops.

Characteristics of Bioenergy Crops

- They are **resistant to diseases and pests** due to perennial nature.
- Bioenergy plans have **improved phenotypic, architectural, biochemical and physiological characters** which are desirable traits in biofuel production.
- Moreover, bioenergy crops **grow faster** than other crops.
- They require **less biological, chemical or physical pre-treatments**.

Agronomic and Metabolic Traits:

- Bioenergy crops require **low energy for the establishment**, possess good adaptation to marginal lands and hold higher biomass.
- These plants **decrease global warming and mitigate** the effect of **global climate change**.

Physiological and Eco physiological Traits:

- Bioenergy plants **store thermo-chemical and solar energy** in several biochemical forms.
- The physiological traits include **efficient nutrient cycling, low nutrient requirement, carbon sequestration**, low competition among plant groups, long canopy duration and effective light capturing.

Biochemical Composition and Caloric Content:

- Bioenergy crops are a **good energy source**.
- **Carbohydrate generation** is a valuable trait in bioenergy crops.

India and Bio Energy:

- **Ministry of New and Renewable Energy (MNRE)** has set the national target is to achieve **10 GW** of installed **biomass power** by 2022.
- MNRE provides **financial incentives and subsidies** for project that uses **biomass and bagasse cogeneration technology**.
- MNRE also plans on creating a '**National Biomass Repository**' to ensure **availability of biofuels** produced from domestic feedstock.
- The **National Policy on Biofuels** is aimed at taking forward the indicative target of achieving **20% blending of biofuels** with fossil-based fuels **by 2030**.

DRDO CELEBRATES ITS FOUNDATION DAY

Recently, Defence Research and Development Organisation (DRDO) celebrated **64th DRDO Day**.

DRDO:

- DRDO is the R&D wing of **Ministry of Defence**, Government of India.
- It was formed in 1958 from the amalgamation of **Technical Development Establishment (TDEs)** of the Indian Army and the **Directorate of Technical Development & Production (DTDP)** with the Defence Science Organisation (DSO).
- **Headquarters:** New Delhi
- **Aim:** Empowering the nation with state-of-the-art indigenous Defence technologies and systems.

Objectives:

- Design, develop and lead to production **state-of-the-art sensors**, weapon systems, platforms for the Defence Services.
- Provide **technological solutions** to the Services to optimize combat effectiveness and to promote well-being of the troops.
- **Develop infrastructure** and committed quality manpower and build strong indigenous technology base.

Contribution of DRDO:

Military Technology

- DRDO is working on multiple cutting-edge **military technology areas such as Aeronautics**, armaments, combat vehicles, simulation, cyber, **hypersonic technologies**, quantum computing and communication, artificial intelligence etc.

Participation of Industries

- 175 **transfer of technology (ToT) licenses** were signed during 2021
- DRDO is ensuring the **participation of industry** as Development cum Production Partners (DcPP) and **Production Agencies (PA)** in the projects.
- Test facilities have been opened up for industries and guidelines for **GOCO** (Government Owned and Company Operated) have been promulgated.

Societal Contribution

- DRDO technologies played a crucial role during second wave of Covid.
- **medical oxygen plants** and covid hospitals were set up
- **Anti-Covid drug** in the form of therapeutic application of 2-deoxy-D-glucone (2DG) developed by DRDO promoted **Self Sufficiency**.

Employment Opportunities

- DRDO launched, **Dare to Dream contest**, Regular MTech Programme in Defence Technologies in 40 Universities through AICTE.
- It has introduced elective subjects in **Defence Technologies** for BTech courses,
- DRDO-MoE collaborative programme for PhD students and MoU with universities focus on joint research activities, faculty and student exchange programme.
- Through the **Technology Development Fund (TDF)**, it has assigned 40 projects to industries and MSME's.

Recent Achievements

- It conducted maiden flight of
- **Akash-New Generation Surface to Air Missile (NG SAM).**
- New generation surface-to-surface missile **Pralay.**
- Indigenous air frames for **BrahMos supersonic cruise missile.**
- Vertical Launch Short Range SAM, **Stand-off Anti-Tank (SANT)** missile.
- Supersonic missile assisted release of **torpedo.**

FIBROMYALGIA LIKELY THE RESULT OF AUTOIMMUNE PROBLEMS

- Recently, scientists concluded that fibromyalgia is an autoimmune disorder.
- An autoimmune disease is a **condition in which your immune system mistakenly attacks the body.**
- It is a condition that causes pain all over the **body sleep problems, fatigue,** and often emotional and **mental distress.**
- Fibromyalgia is one of the most common orthopedic conditions worldwide, affecting roughly one in every **40 people.**
- **Symptoms**
- : Muscle pain, burning, twitching, or tightness, **Low pain threshold, or tender points.**

THE FIRST CASE OF FLORONA (FLU + CORONAVIRUS) DETECTED IN ISRAEL

Recently, first case of florona detected in Israel.

- It is the occurrence of **flu** and **coronavirus** at the same time.
- The viruses spread through respiratory droplets or aerosols released through talking, sneezing, or coughing.
- **Symptoms:** cough and cold, fever, runny nose.

CARBON-RICH STARS STEAL HEAVY ELEMENTS FROM THEIR LOW MASS COMPANIONS

Recently, astronomers from the Indian Institute of Astrophysics, Bengaluru have analyzed the surface chemical composition of several Carbon Enhanced Metal-Poor (CEMP) stars.

Carbon Enhanced Metal Poor (CEMP) stars

- Metal-poor stars that show enhancement of **carbon** are called **Carbon Enhanced Metal Poor (CEMP) stars.**
- They were formed from the ejected material of the first stars that formed after the **Big Bang**, carry the chemical imprints of early Galactic chemical evolution.

- Probing into the formation of these metal-poor stars can help trace

the **origin** and **evolution** of the elements in the Universe.

WHAT IS AQUAMATION, THE GREEN ALTERNATIVE TO CREMATION CHOSEN BY DESMOND TUTU?

Recently, the body of Nobel Peace Prize winning Anglican archbishop Desmond Tutu underwent aquamation, a green alternative to traditional cremation methods, in Cape Town.

What is Aquamation?

- **Aquamation** or alkaline hydrolysis consists of cremation by water rather than fire.

Process:

- The deceased's body is immersed for three to four hours in a **mixture of water and potassium hydroxide** in a pressurised metal cylinder and heated to around 150 degrees Celsius.
- The entire body is **liquefied**, except for the bones.
- The bones are dried in an oven and then **reduced to dust**.

Genesis:

- The process was developed in 1888 by Amos Herbert Hanson.
- It was first used in the **funeral industry**, at two funeral homes in USA.

Benefits of Aquamation:

- Substituting aquamation for fire-based cremation cuts a funeral's
 - **greenhouse gas emissions** by 35 percent.
 - **energy use** by 90 percent compared with cremation by flame.
- It completely **hydrolyzes both RNA and DNA** and destroys all pathogens.
- It converts any drugs in the body to harmless **biodegradable derivatives**.
- The cost of both flame-based cremation and aquamation is **similar**.

INDIAN RESEARCHER TO DEVELOP INDIGENOUS TOOLS TO CONTROL VAPOUR EXPLOSION

An Associate Professor, a Swarnajayanti fellow, is working on a novel technology utilising Artificial Intelligence/Machine Learning to **develop prognostic tools for advance prediction and control of vapor explosion induced accidents in boilers**.

Swarnajayanti fellowship

- It is a research fellowship in India awarded **annually** by the **Department of Science and Technology**.
- It is given for **outstanding research** done by young scientist in the field of **biology, chemistry, environmental science, engineering, mathematics, medicine and physics**.

- **Citizens of India** who are **under 40 years of age**, and have a proven track record may apply.

US SCIENTISTS DEVELOP NEW COMPOUND TO CONVERT INDUSTRIAL CO₂ INTO VALUABLE CHEMICALS

Recently, a team of researchers have developed a new metal-organic framework that can catalyze the production of cyclic carbonates.

- This process of catalysis will scrub the CO₂ emerging from the factories and convert it into commercially valuable chemicals.

Metal organic framework

- They are a class of compounds consisting of **metal ions** or **clusters** coordinated to organic ligands to form one, two, or three-dimensional structures.
- **Ligand** is an ion or molecule that binds to a central atom to form a coordination complex.
- They are a subclass of **coordination polymers**, with the special feature that they are often porous.

FUMIGANT USED IN SUICIDE OFFICIALS OF E-COMMERCE GIANT BOOKED

Recently, a person has died by suicide after consuming the agricultural fumigant sulfa.

- Sulfa drug, also called **sulfonamide** are any member of a group of **synthetic antibiotics** containing the sulphanilamide molecular structure.

- Sulfa drugs were the first chemical substances systematically used to treat and prevent **bacterial infections** in humans.
- They are still used for treating **urinary tract infections** and preventing infection of burns.
- They are also used in the treatment of certain forms of **malaria**.

SMART PROTEIN MARKET WILL RISE IN FUTURE

Smart Proteins:

- Smart proteins or **alternative proteins** are **the high protein food products**.
- These smart proteins can replace animal-derived meat, eggs, and dairy, products which have high protein. It can be anything other than dairy and meat.

- Examples:
 - Plant-based meat and eggs, fish, seafood, and baked goods,
 - Dairy materials made from plant or crop ingredients such as soy extracts, pea proteins, pulse extracts, beetroot juice, coconut oil etc.
- Smart-proteins derived from plants are classified as veg food under FSSAI guidelines.

FRANCE DETECTS A NEW COVID-19 VARIANT CALLED 'IHU', 12 INFECTED

Recently, The **IHU variant** of Coronavirus has been reported in **France**.

IHU Variant

- It is a new strain of the Covid-19 virus.
- IHU variant is also known as **B.1.640.2 variant**.
- IHU has 46 mutations with **30 amino acid substitutions** and **12 deletions**.
- 14 amino acid substitutions, including **N501Y and E484K**, are located in the spike protein of the IHU strain.

- Amino acids are molecules that combine to form proteins, and both are the building blocks of life.
- **N501Y and E484K mutations** were earlier also found in Beta, Gamma, Theta and Omicron variants.
- N501Y mutation, first seen on the Alpha variant, can make it **more transmissible**
- E484K mutation mean that the IHU variant will be **more resistant to vaccines**.

INDIA'S CANCER BURDEN: CASES & DEATHS INCREASED LAST DECADE, COVID-19 WIDENS SCREENING GAP

According to Institute for Health Metrics and Evaluation (IHME), Cancer cases in India increased at an average annual rate of 1.1-2 per cent from 2010-2019.

- Deaths from cancer in the country also went up at an average rate of 0.1-1 per cent in the same period.

Highlights

- Globally, cancer cases increased **21% and deaths 26%** from 2010-2019.
- **Tracheal, Bronchus and Lung (TBL)** cancer was the **leading cause** of cancer globally, followed by **colon and rectum, stomach, breast and pancreatic** cancer respectively.
- In 2019, the **cancer was the leading cause of deaths** globally after cardiovascular diseases.

- Cancer cases and deaths were the highest in **low and low-middle SDI (socio-demographic index)** countries and regions.
- **India** falls in the low-middle category.

Effect of Covid-19

- According to study, **Covid-19 pandemic** may have **slowed progress** in cancer care.
- In India, **cancer services** such as new patient registrations, outpatient services, hospital admissions and major surgeries **had dropped** between March and May 2020.
- **Cancer screening** has **completely stopped** in the last two years when the pandemic was raging.

Cancer

- Cancer is a disease in which some of the **body's cells grow uncontrollably** and **spread** to other parts of the body.
- It arises from the **transformation of normal cells into tumour cells** in a multi-stage process that generally progresses from a **pre-cancerous lesion** to a malignant tumour.
- These changes are the result of the **interaction between a person's genetic factors and three categories of external agents**, including:
 - **Physical carcinogens**, such as ultraviolet and ionizing radiation;
 - **Chemical carcinogens**, such as asbestos, components of tobacco smoke, aflatoxin (a food contaminant), and arsenic (a drinking water contaminant); and
 - **Biological carcinogens**, such as infections from certain viruses, bacteria, or parasites.
- It is a **non-contiguous and incurable** disease.

Risk factors for cancers

- **Tobacco use, alcohol use, unhealthy diet, physical inactivity and air pollution** (and other **non-communicable diseases**).
- Some **chronic infections**.
- **Hepatitis B and C viruses** and some **types of HPV increase** the risk for liver and cervical cancer, respectively.
- **Infection with HIV** substantially increases the risk of cancers such as **cervical cancer**.

Cancer Treatment

- **Chemotherapy:** Chemotherapy is a type of cancer treatment that **uses drugs** to kill cancer cells.
- **Hormone Therapy:** Hormone therapy is a treatment that **slows or stops the growth of breast and prostate cancers** that use hormones to grow.

- **Hyperthermia:** Hyperthermia is a type of treatment in which **body tissue is heated to as high as 113 °F to help damage and kill cancer cells** with little or no harm to normal tissue.
- **Immunotherapy:** Immunotherapy is a type of cancer treatment that **helps immune system** fight cancer.
- **Photodynamic Therapy:** Photodynamic therapy uses a **drug activated by light to kill cancer** and other abnormal cells.
- **Radiation Therapy:** Radiation therapy is a type of cancer treatment that uses **high doses of radiation** to kill cancer cells and shrink tumors.

Indian government initiatives against cancer

National Cancer Control Programme:

- Launched in in **1975** and **revised its strategies in 1984-85** stressing on primary prevention and early detection of cancer.

The programme envisages:

- **Control of tobacco** related cancers.
- **Early diagnosis and treatment** of uterine cervical cancer.
- Distribution of **therapy services**.
- **Pain relief and palliative care** through augmentation of health infrastructure.

National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)

- It was **launched in 2010**.
- **Objective:**
 - **Health promotion** through involvement of community, civil society, organizations, media etc.
 - **Population based and opportunistic screening** at all levels from sub-centre and

above for early detection of diabetes, hypertension and common cancers.

- To **prevent** and **control** **chronic NCDs** (common Cancer, Diabetes and Hypertension).

National Cancer Registry Programme (NCRP)

- It was commenced by the **Indian Council of Medical Research (ICMR)** with a network of cancer registries across the country in December 1981.

Objective:

- To generate **reliable data** on the magnitude and patterns of cancer

- **Undertake epidemiological studies** based on results of registry data
- Help in **designing, planning, monitoring and evaluation of cancer** control activities under the National Cancer Control Programme (NCCP)
- **Develop training programmes** in cancer registration and epidemiology

National Cancer Grid

- It was **formed in August 2012**.
- The National Cancer Grid is a **network of major cancer centers, research institutes, patient groups, and charitable institutions** across India.

HERE'S WHAT THE 2021 GLOBAL SEMICONDUCTOR SHORTAGE IS ALL ABOUT

Currently, there is a global shortage of semiconductor chips.

What is a chip?

- Chips are usually **made from silicon**, that "semi-conducts" electricity.
- The chip performs a **variety of functions**.
- **Memory chips**, which **store data**, are relatively simple and are traded like commodities.
- **Logic chips**, which **run programs and act as the brains of a device**, are more complex and expensive.
- The chips are **manufactured in** factories called **foundries**.
- They are **faster, cheaper and more efficient**.

Cause for Shortages:

- Shift to Work from home increased the sales of laptops, home networking gear etc in which chip is used
- Sudden rebound of car sales
- Building up of inventory by **Huawei Technologies** to ensure it could **survive U.S. sanctions** that were set to cut it off from its primary suppliers.
- Power outages in some parts of US shut semiconductor plants.

Steps taken by India:

National policy on Electronics 2019:

- The Policy envisions positioning India as a global hub for **Electronics System Design and Manufacturing (ESDM)**.
- **Objective:** To **encourage and drive capabilities** in the country for **developing core components**, including chipsets,

and **create an enabling environment** for the industry to compete globally.

Salient Features:

- **Create eco-system** for globally competitive ESDM sector: Promoting domestic manufacturing and export in the entire value-chain of ESDM.
- **Provide incentives and support** for manufacturing of core electronic components and significantly enhancing availability of skilled manpower, including re-skilling.
- Provide special package of incentives for mega projects which are extremely high-tech and entail huge investments, such as semiconductor facilities display fabrication, etc.
- **Formulate suitable schemes** and incentive mechanisms to encourage new units and expansion of existing units.
- **Promote Industry-led R&D and innovation in** all sub-sectors of electronics, including grass root level innovations and early-stage **Start-ups in emerging technology** areas such as 5G, Internet of

Things, Artificial Intelligence (AI), Machine Learning, etc.

Modified Electronics Manufacturing Clusters (EMC 2.0) Scheme:

- Launched in April 2020.

Objectives:

- To address the disabilities, by **providing support for creation** of world class **infrastructure** along with common facilities and amenities.
- To **provide financial assistance** for setting up of both EMC projects and Common Facility Centres (CFCs) across the country.

Comprehensive Programme for Semiconductor Manufacturing:

- Launched in December 2021.
- The scheme will be **phased out over six years**.
- It has an **outlay of Rs 76,000 crore**.
- **Objective:** To offer **infrastructure support** to semiconductor manufacturers to attract big players.

TEC RELEASES 'CODE OF PRACTICE' FOR SECURING CONSUMER INTERNET OF THINGS

Telecommunication Engineering Centre (TEC), Ministry of Communications, has released a report "Code of Practice for Securing Consumer Internet of Things (IoT)".

Highlights of guidelines

- **No universal default passwords**
 - All IoT device default passwords shall be **unique per device**.

- The passwords **must not be resettable to any universal default value**.
- **Manage reports of vulnerabilities**
 - IoT device **manufacturers, IoT service providers/ System integrators and Mobile application developers** should provide a **dedicated public point of contact** as part of a vulnerability

disclosure policy for security researchers and others to **report security issues**.

- **Keep software updated**
 - Software components in IoT devices should be **securely updateable**.
 - Updates shall be **timely and should not adversely impact** the functioning of the device.
 - For constrained devices that cannot **physically be updated**, the product should be **isolatable and replaceable**.
- **Securely store sensitive security parameters**
 - IoT devices may **need to store security parameters** such as keys & credentials, certificates, device identity etc. which are **critical for the secure operation** of the device.
 - Credentials (e.g. user names, passwords) **should not be hard-coded** in the source code as they can be **discovered via reverse engineering**.
- **Communicate securely**
 - **Security-sensitive data**, including any **remote management and control**, should be **encrypted in transit, appropriate** to the properties of the technology.
- **Ensure software integrity**
 - Software (including firmware) on IoT devices should be **verified using secure boot** mechanisms wherever applicable.
- **Ensure that personal data is secure**
 - If the device **collects or transmits personal data**, such data should be **securely stored**.
 - The **confidentiality of personal data** transiting between a device and a service, especially associated

services, should be **protected**, with best practice **cryptography**.

- **Make systems resilient to outages**
 - **Resilience should be built into IoT devices** and services where required by their usage or by other relying systems.
 - IoT devices should **remain operating and locally functional** in the case of a loss of network, without **compromising security or safety**.
- **Examine system telemetry data**
 - If **telemetry data** is collected from IoT devices and services, such as usage and measurement data, it should be **monitored for security anomalies**.
- **Make it easy for users to delete user data**
 - Devices and services should have mechanisms such that **personal data can easily be removed** when there is a **transfer of ownership**, when the **consumer wishes** to delete it.
 - A **'factory reset'** function **must fully remove** all user data/credentials stored on a device.
- **Make installation and maintenance of devices easy**
 - Installation and maintenance of IoT devices should **employ minimal steps** and should **follow security best practice on usability**.
 - Consumers should also be **provided with guidance** on how to securely set up their device and also to check **whether the device is securely set up**.
- **Validate input data**
 - The consumer IoT device software shall **validate data input** via **user interfaces** or transferred via **Application Programming Interfaces (APIs)** or

between **networks in services and devices.**

Need for such guidelines

- In view of the anticipated growth of IoT devices, it is important to ensure that the **IoT end points comply** to the safety and security standards to **protect the users and the networks** that connect these IoT devices.
- **IoT devices, services & software** are at **risk of attack by a variety of malicious parties**, from novice hackers to professional criminals and even state actors.
- The **hacking of the devices/networks** being used in daily life would **harm companies, organisations, nations and more importantly people**, therefore securing the IoT eco-system end-to-end is important.
- The **privacy of the data of the individuals** is another very important thing that should be protected.

Internet of Things (IoT)

- The Internet of Things (IoT) describes the **network of physical objects “things”** that are **embedded with sensors, software, and other technologies** for the purpose of **connecting and exchanging data with other devices and systems** over the internet.
- These devices range from **ordinary household objects to sophisticated industrial tools.**

Applications

- Smart home
- Elder care
- Health
- Transportation
- Communication
- Agriculture
- Manufacturing

USE DRONES MORE EFFECTIVELY: CIVIL AVIATION MINISTRY

Recently, the Ministry of Civil Aviation (MoCA) requested to deploy unmanned aerial vehicles for surveillance, situational analysis, crime control, VVIP security, disaster management.

Application of drones By the Indian Government

Urban Development

- The Andhra Pradesh Government is using drones to **monitor the development activities of the capital city region** Amaravati, through drone-based outputs.

- As a pilot project, the Karnataka Government is using drones for property tax estimation.

Transport

- Indian Railways has used drones for monitoring the **25-km long Seawoods-Belapur-Uran15 corridor.**
- The National Highways Authority of India (NHAI) has deployed drones in the **Salem-Chennai green corridor expressway project** to ensure accuracy concerning the extent of land.
- As a pilot project, the **Government of Maharashtra** has deployed two drones to

monitor **weekend rush hour traffic and accidents**.

Agriculture

- The Maharashtra Government has used drones over fields in the Marathwada region for carrying out **crop loss assessments due to deficit rainfall**.
- The individual farmers of Andhra Pradesh's capital region are deploying drones to **spray crop pesticide/fertilizer in limited crop areas**.

Disaster Management

- The National Disaster Management Authority (NDMA) deployed drones **to scan**

areas where search and rescue teams could not access in flood-hit Uttarakhand.

Mining

- The Andhra Pradesh Government used a drone for **monitoring stockpile storage, 3D mapping, and volumetric analysis of limestone** over some time.
- In Jharkhand, drones are deployed for **boundary and safety zone inspection of coal and iron mines**, counting of vegetation in reclaimed areas.
- The Karnataka Police Department has deployed drones to **detect illegal sand mining**.

'REOVIRUS' WREAKS HAVOC ON WILD CRAB CULTIVATION IN A.P.

Recently, Mud Crab Reovirus (MCRV) led to mass mortality of wild crab (*Scylla serrate*) in Andhra Pradesh.

Mud Crab Reovirus (MCRV):

- MCRV, is also known as **Sleeping Disease**.
- The viral pathogen belongs to the family of '**Reoviridae**'.

- It is responsible for the mass mortality of wild crabs.
- It mainly affects the **connective tissue of hepatopancreas**, gills, and intestine of wild crabs.
- In 2007, the MCRV paralysed the wild crab species cultivation in China.

DNA FROM AIR MAY HELP IDENTIFY, TRACK ANIMALS IN THE WILD: STUDIES

Recently, researchers have independently shown that environmental DNA (e-DNA) can potentially identify and monitor terrestrial animals.

E-DNA

- **Environmental DNA (eDNA)** is nuclear or mitochondrial DNA that is released from an organism into the environment.

- **Sources of eDNA** include secreted feces, mucous, and gametes, shed skin and hair and carcasses.
- E-DNA can be detected in **cellular** or **extracellular** (dissolved DNA) form.

Working

eDNA can be analyzed via the following steps:

- Sample collection
- DNA extraction and purification
- Quantitative PCR (qPCR) detection

Application

Wildlife DNA forensics

- It can be used to address basic **forensic identification** issues at the level of individual, population or species.
- Detection of eDNA fragments can also provide evidence for **illegal wildlife trade** and traceability of illegal fishing products.

Detection of aquatic invasive species

- The use of eDNA provides the possibility of confirming **invasive species** detection in hours or days instead of weeks or months, that allows to act quickly to minimize dispersal and settlement of the invader.

Biodiversity and community structure

- It can be used as a tool to produce **biodiversity estimates** that are taxonomically comprehensive, quicker to produce, and less reliant on taxonomic expertise.

Ecosystem health

- The use of eDNA to monitor changes in **community composition** and reductions in species diversity can also serve as a proxy for assessing ecosystem health.

Species historical patterns of distribution

- The **genetic information** (ancient eDNA) in sediments, ice cores and other environmental sources could allow scientists to reconstruct community structure and historical ecological process.

SCIENTISTS FIND PECULIAR STAR WITH 'HEARTBEAT' BUT DEVOID OF PULSATION

Recently, a group of Indian and international scientists have spotted a peculiar binary star that shows heartbeat but no pulsations contrary to the norm of binary stars of sporting both heartbeats as well as pulsations.

Heartbeat star

- They are pulsating variable binary star systems in **eccentric orbits** with vibrations caused by tidal forces.

- The name "**heartbeat**" comes from the similarity of the light curve of the star with what a heartbeat looks like through an electrocardiogram if their brightness was mapped over time.
- Many heartbeat stars have been discovered with the **Kepler Space Telescope**.
- These are the binary star systems where each star travels in a **highly elliptical orbit** around the common centre of mass, and the distance between the two stars varies drastically as they orbit each other.

DEMENTIA CASES IN INDIA TO DOUBLE BY 2050, LANCET STUDY SHOWS

Dementia Cases in India is Expected to almost double by 2050

Highlights:

- The number of dementia cases in India is expected to almost double by 2050
- The tally will increase to **11,422,692 from 3,843,118** in 2019.
- Neighbouring countries Bangladesh, Bhutan, Pakistan, and Nepal are likely to record an increase of 254 percent, 351 percent, 261 percent, and 210 percent, respectively.
- The Global tally of cases will increase almost triple to 153 million in 2050.
- The highest increase in cases is projected for **North Africa, the Middle East, and Eastern Sub-Saharan Africa.**

Dementia

- Dementia is used to describe a group of symptoms affecting **memory, thinking,**

and social abilities severely enough to interfere with your daily life.

- Dementia results from a **variety of diseases and injuries that primarily or secondarily affect the brain.**
- Alzheimer's disease is the most common form of dementia and may contribute to 60-70% of cases.
- **Symptoms:** Memory loss, Difficulty communicating or finding words, Visual and **spatial abilities**, such as getting lost while driving, Reasoning or problem-solving, Handling **complex tasks, Confusion,** and **disorientation.**
- **Cure:** Currently no cure available.
- Dementia is currently **7th leading cause of death** among all diseases and one of the major causes of disability and dependency among older people globally.
- Currently, more than **55 million people** live with dementia worldwide, and there are nearly 10 million new cases every year.
- Dementia mainly **affects older people.**

VISUALLY CHALLENGED STUDENTS TO SOON HAVE ACCESS TO USER-FRIENDLY BRAILLE MAPS

Digital Embossing Technology will soon launch for visually challenged students.

Digital Embossing Technology

- Digital embossing is a technology that **eliminates the need for printing plates,** molds, chemicals, and solvents, emitting no pollutants or waste and reducing overall energy usage.
- It eliminates the need for printing plates, moulds, chemicals, and solvents, emitting no

pollutants or waste and reduces overall energy usage.

- This innovative technology has been **introduced, designed and implemented first time in India** by National Atlas & Thematic Mapping Organisation (NATMO).
- The maps produced using this technology is **not only useful for high-speed production of the maps** but can also **produce Braille Maps** that can be used by more people for years together.

Braille language

- Braille language is a tactile code **enabling blind and visually impaired people to read and write by touch.**
- It has various combinations of raised dots representing the alphabet, words, punctuation and numbers.
- It was developed by **Louis Braille** in the 1820s.
- Braille characters are formed using a combination of six raised dots arranged in a 3 x 2 matrix, called the **braille cell.**
- Braille language was started as a military code called **night writing.**

National Atlas & Thematic Mapping Organisation (NATMO)

- NATMO is a premier **National Organization in the field of thematic maps and atlas making,** under the **ministry of science and technology.**

Objectives:

Functions:

- Compilation of the **National Atlas of India**
- Preparation of the National Atlas maps in regional languages
- Preparation of thematic maps based on research studies on environmental and associated aspects and their impact on social and economic development.
- Installation of automated Mapping System for increasing speed and efficiency in mapping.
- Promote the use of **geospatial information and technology** in cartography.
- Geographical Researches
- Remote Sensing and Digital Image processing.
- Division on Cartography for the Visually Impaired.

NCBS: ZEBRAFISH STUDY REVEALS HOW THE BRAIN MAKES ITS CONNECTIONS

Recent work by researchers has thrown light on what stimulates synapses to form.

Synapses:

- Synapses are **microscopic gaps that separate the terminal of one neuron from receptors** of another neuron in brain.
- There are two types of **synapses:** Chemical and Electrical.
 - In **chemical synapses**, there is a space of about 20 nanometres between two neurons.
 - In **electrical synapses**, the two neurons have a physical connection and the

conversion of electrical to chemical need not occur and they communicate directly.

- **Electrical synapses** are like a physical wire. Communication is faster but they are also fewer in number.

Key Finding

- Researchers used **Zebra fish for their study.**
- Research shows that **electrical synapses are formed before chemical synapses.**
- They are like a blueprint in which neurons make a **handshake.** This results in the making of chemical synapses.

- Research on organisms such as **leeches** showed that removing electrical synapses means that chemical synapses do not form. However, the mechanism of how it happens in higher organisms such as vertebrates was not known.

Forces behind synapses

- The group observed that knocking out a particular protein known as the **gap junction delta 2b (gjd2b)** in the cerebellum (structure located at the back of the brain) of zebrafish affected levels of the enzyme CaMKII.
- Levels of CaMKII were seen to increase in the Purkinje neurons in the cerebellum.
- These neurons and the cerebellum itself control coordination of movements in the organism.

Zebrafish

- The zebrafish is a **freshwater fish** belonging to the minnow family (Cyprinidae).

- It is a popular aquarium fish, frequently sold under the trade name zebra danio.
- The zebrafish is an important and widely used vertebrate model organism in **scientific research**, for example in drug development, in particular pre-clinical development.
 - Its embryos are nearly **transparent** which allows researchers to easily examine the development of internal structures.
 - Every blood vessel in a living zebrafish embryo can be seen using just a **low-power microscope**.
- The zebrafish is native to fresh water habitats in **South Asia** where it is found in India, Pakistan, Bangladesh, Nepal and Bhutan.
- It typically inhabits moderately flowing to stagnant **clear water** of quite shallow depth in streams, canals, ditches, oxbow lakes, ponds and rice paddies.
- As a **vertebrate**, the zebrafish has the same major organs and tissues as humans.
 - Their muscle, blood, kidney and eyes share many features with **human systems**.

SCIENTISTS HAIL HAR GOBIND KHORANA ON 100TH ANNIVERSARY

Recently, the 100th birth anniversary of Dr. Har Gobind Khorana was celebrated.

Dr. Har Gobind Khorana (1922-2011):

- He was an Indian biologist, born in undivided India (Lahore), and settled as a citizen of the USA.
- He is known as the **Father of Genetic Engineering** for his key role in deciphering the **Genetic Code**.
- For his contribution, **he received the Nobel prize in Physiology in 1968** for their **interpretation of the genetic**

code and its function in protein synthesis.

- He was the first scientist to chemically synthesize **Oligonucleotides**.
- Oligonucleotides are **artificially created DNA and RNA molecules**.
- He investigated **mutations in rhodopsin** (a light-sensitive protein found in the **retina of the eyes**) that are associated with **retinitis pigmentosa**, which causes **night blindness**.

Genetic code:

- **Genetic code** is the pattern in which the **four bases of DNA or RNA (A, C, G, and T)** are joined or structured together.
- **All living organisms on earth have the same genetic codes** or components of DNA. However, the **sequence of those components (nucleotides) in the DNA is different** for all species.

Khorana Program

- It is aimed to **encourage Indian and American post-graduate students to take up research as a career.**
- The government of India provides scholarships to Indian students under this program.
- The **Ministry of science and technology** of India along with **Wisconsin- Madison University (USA) and the Indo-US Science and Technology Forum (IUSSTF)** runs this program.

DRDO FLIGHT TESTS MAN-PORTABLE ANTI-TANK GUIDED MISSILE

Recently, DRDO tested man-portable anti-tank guided missile.

- It is an Indian third-generation **anti-tank guided missile** derived from Nag ATGM.

- It is fitted with **high-explosive anti-tank (HEAT)** warhead.
- The missile has a range of **2.5 km.**
- It is a low weight **fire and forget missile**

HOW SCIENTISTS ARE USING GRIME-EATING BACTERIA TO RESTORE CLASSICAL ART

Scientists are using the bacteria *Desulfovibrio vulgaris* (*D vulgaris*) to restore classical art.

D vulgaris or *Desulfovibrio vulgaris*:

- It is commonly found in **aquatic environments, soil, and animal intestine.**
- It is a **sulfur-reducing bacteria.**
 - So it can be used as **bio-cleaning agent, to clean monuments facing stains due to acidic rains, which had sulfur (SO₂).**

AIM ANNOUNCES 75 WINNERS OF ATL SPACE CHALLENGE 2021

Atal Innovation Mission (AIM) unveils the Top Teams of the ATL Space Challenge 2021.

- The Challenge was launched in collaboration with **Indian Space Research Organisation**

(**ISRO**) and **Central Board of Secondary Education (CBSE).**

- **Aim:** To enable innovation among young school students to create something in space sector that will help them learn about the

space & create something that space programme can use itself.

- It aligns with the World Space Week 2021 which is observed from 4th -10th October each year.

WHAT IS THE 'MYSTERY HUT' SPOTTED ON THE MOON? CHINESE ROVER NOW HAS ANSWERS

Recently, mysterious-looking outcrop spotted by China's Yutu mission on the Moon was found to be a simple rock.

- It is the **robotic lunar rover** component of China Chang'e 4 mission to the Moon.

- It entered lunar orbit before making the world's first **soft landing** on the far side of the Moon.
- Yutu-2 is currently operational as the world's **most long-lived** lunar rover by far and the world's first lunar rover traversing the far side of the moon.

ROCKET SCIENTIST S. SOMANATH ASSUMES CHARGE AS ISRO CHIEF

Rocket scientist S. Somanath has been appointed as the Chairman of the Indian Space Research Organisation (ISRO) and the Space Secretary.

- He played a major role in development of the **PSLV and GSLV Mk-III**.

Indian Space Research Organisation (ISRO)

- It is the national space agency of India.
- **Formed:** 15 August 1969
- **Headquartered:** Bengaluru
- It operates under the **Department of Space (DOS)** which is directly overseen by the **Prime Minister of India**, while **Chairman of ISRO acts as executive** of DOS as well.
- ISRO is the **primary agency** in India to perform tasks related to **space based applications, space exploration and development of related technologies**.
- It is **one of six government space agencies** in the world which possess **full launch capabilities, deploy cryogenic**

engines, launch extra-terrestrial missions and operate large fleets of **artificial satellites**.

- It built India's **first satellite, Aryabhata**, which was launched by the Soviet Union in 1975.
- ISRO has the world's **largest constellation of remote-sensing satellites** and operates the two satellite navigation systems **GAGAN (GPS Aided GEO Augmented Navigation)** and **NavIC (Navigation with Indian Constellation)**.
 - The main objectives of **GAGAN** are to provide **Satellite-based Navigation services with accuracy and integrity** required for civil aviation applications and to provide better **Air Traffic Management over Indian Airspace**.
 - **NavIC:** The main objective is to provide **Reliable Position, Navigation and Timing services** over India and its neighbourhood.

- NavIC is the operational name of Indian Regional Navigation Satellite System (IRNSS).

Major ISRO achievements

PSLV-C51/Amazonia-1

- Amazonia-1 was launched by PSLV-C51 launch vehicle.
- Polar Satellite Launch Vehicle (PSLV) is the **third generation launch vehicle of India**.
- It is the **first Indian launch vehicle** to be equipped with **liquid stages**.
- Amazonia-1, the **optical earth observation satellite** of National Institute for Space Research (INPE) of Brazil, would provide **remote sensing data to users** for monitoring **deforestation in the Amazon region** and analysis of **diversified agriculture across** the Brazilian territory.

Indian student satellites UNITYsat and Satish Dhawan SAT (SDSAT)

- Both launched by **PSLV-C51 launch vehicle**.
- UNITYsat is a **combination of three satellites** for providing **Radio relay services**.
- SDSAT is a **nano satellite** intended to study the radiation levels/space weather and demonstrate long range communication technologies.

GSLV-F10/Gisat-1 (renamed to EOS-3)

- The GSLV-F10 intended to put the geosynchronous satellite GISAT-1 (renamed to earth observation satellite EOS-3) into orbit.
- EOS-3 was supposed to provide **real-time imaging of large areas of the earth, monitor natural disasters and provide warnings for the same, and observe**

cyclones, cloudbursts, thunderclouds, etc.

- However, mission couldn't be accomplished as intended.

Upcoming plans for ISRO

Chandrayaan 3

- It will attempt a **soft landing on the moon**, most likely in the third quarter of 2022.
- A **lunar lander and a rover** will go on the mission.

Radar imaging satellite-RISAT-1A (EOS-4)

- It will be launched by ISRO using **PSLV**.
- It will carry out **terrain mapping and analyse the land, ocean and water surfaces for soil moisture**.

Gaganyaan

- It is India's **first human spaceflight** mission, is expected in **2023**.
- The spacecraft jointly made by **ISRO and Hindustan Aeronautics Limited (HAL)** will carry **three Indian astronauts** to the low earth orbit (of 2000 km or less) for a **period of five to seven days**.

GSAT-24

- It will be launched by **NewSpace India Ltd (NSIL)**.
- It is a **four-tonne class communication Ku-band** satellite made by ISRO.

Other missions

- **Oceansat-3 (EOS-6)**, set to be launched by PSLV, and **Microsat (EOS-2)**, set to be

launched in the first developmental flight of the Small Satellite Launch Vehicle (SSLV).

6.6 MAGNITUDE EARTHQUAKE STRIKES INDONESIA, TREMORS FELT IN CAPITAL

A 6.6-magnitude earthquake was reported at the coast of Indonesia's Java Island.

- Java (Known as Djawa n Indonesia) is **one of Indonesia's Greater Sunda Islands**.
- It is surrounded to the southern by the Indian Ocean and to the northern by the Java Sea.

- Java has a population of 147.7 million people, earning it to be the **world's most populated island**.
- It is located in **southeastern Malaysia and Sumatra**, south of Borneo (Kalimantan) and western Bali.

SPACE ANAEMIA: ASTRONAUTS' BODIES ELIMINATE 30% MORE RED BLOOD CELLS UNTIL SEVERAL MONTHS AFTER RETURNING TO EARTH

Recently, a study was published on Space anaemia.

Space anaemia:

- Anaemia is a disease related to red blood cell deficiency.
- It is noticed that **people visiting space, faces the problem of anaemia**. So, this

type of anaemia is designated as Space anaemia.

- The reason behind this problem is the **destruction of red blood cells, resulting from fluid shifts**.
- Fluid shifts happen because the **astronauts' bodies accommodated to weightlessness and again as they re-accommodated to gravity**.

NEW SPECIES OF WOOD-BORING, DEEP-SEA MOLLUSC FOUND IN ARABIAN SEA

A team of researchers have identified a new species of a rare, deep-sea mollusc, named **Xylophaga nandani**, belonging to the family Xylophagidae from the eastern Arabian Sea.

- The discovery is also significant in that this is the **first time** that a member of the genus Xylophaga is being recorded from the **Arabian Sea**.

- Members of the family **Xylophagidae** are deep-sea dwellers. Their presence recorded even at depths of **7,000 metres**.
- They are commonly found on **wood** in deep oceans.
- They are also close relatives to members of the family **Teredinidae**, a common species of wood-boring clams (shipworms) found in coastal waters.

IMD COMMISSIONS 4 NEW DOPPLER RADARS IN LEH, DELHI, MUMBAI & CHENNAI

On the 147th foundation day of the Indian Meteorological Department (IMD), IMD commissioned four doppler weather radars.

- Among these 4, X-band radar in Leh is installed at the **highest altitude anywhere in India**.

Doppler radar

- It is a specialized radar that uses the Doppler effect to produce **velocity data** about objects at a distance.
- It does this by bouncing a **microwave signal** off a desired target and analyzing how the object's motion has altered the frequency of the returned signal.
- This variation gives direct and highly accurate measurements of the **radial component** of a target's velocity relative to the radar.

Working

- The basics of radars is that a beam of energy, called **radio waves**, is emitted from an antenna.
- As they strike objects in the **atmosphere**, the energy is scattered in all directions with some of the energy reflected directly back to the radar.
- The larger the object, the greater the amount of **energy** that is returned to the radar.
- That provides us with the ability to "**see**" rain drops in the atmosphere.

- In addition, the time it takes for the **beam of energy** to be transmitted and returned to the radar also provides is with the distance to that object.

Applications

Weather

- Partly because of its common use by television meteorologists in on-air weather reporting, the specific term "**Doppler Radar**" has erroneously become popularly synonymous with the type of radar used in meteorology.
- Most modern weather radars use the **pulse-Doppler technique** to examine the motion of precipitation, but it is only a part of the processing of their data.

Navigation

- Doppler radars were used as a navigation aid for **aircraft and spacecraft**.
- By directly measuring the movement of the ground with the radar, and then comparing this to the airspeed returned from the aircraft instruments, the wind speed could be accurately determined.

Locus-based navigation

- Location-based Doppler techniques were used in the **U.S. Navy's** historical Transit satellite navigation system.

WHO RECOMMENDS TWO NEW DRUGS TO TREAT COVID-19

The World Health Organization (WHO) has recommended two drugs, Baricitinib and Sotrovimab, for treatment of Covid-19.

Baricitinib:

- Baricitinib is an **immunomodulator**, used to treat **rheumatoid arthritis**.
- It is an **oral drug**.
- It is a part of a **class of drugs** called **Janus kinase (JAK) inhibitors** that **suppress the overstimulation of the immune system**.

Sotrovimab:

- It is developed by **GlaxoSmithKline**.
- It is an **investigational monoclonal antibody** for use in treating conditions caused by coronavirus.
- The WHO has conditionally recommended its use for patients who are older, are immunocompromised, and have underlying conditions like diabetes, hypertension and obesity, and are unvaccinated.

SECOND ALIEN MOON ORBITING A PLANET DISCOVERED OUTSIDE OUR SOLAR SYSTEM, IT'S BIG AND STRANGE

Recently, an exomoon was discovered outside the solar system.

- This is only the second time that such exomoon was detected.
- This moon's diameter is roughly more than nine times the diameter of Earth's moon.
- However, its **mass and composition** is not known now.
- It could be a **rocky core with a light fluffy envelope** or a **thick atmosphere** all the way down to some high-density core.
- The first exomoon candidate is even larger – roughly the **size of our solar system's planet Neptune**.

- It is located approximately **8,000 light-years from Earth**.

Exomoon

- An exomoon or extrasolar moon is a **natural satellite** that orbits an **exoplanet or other non-stellar extrasolar body**.
- The majority of detected **exoplanets are giant planets**.
- It is inferred from the **empirical study of natural satellites** in the Solar System that they are likely to be common elements of planetary systems.

DLI SCHEME: IT MINISTRY INVITES APPLICATIONS FOR SEMICONDUCTOR CHIP DESIGN

Recently, the Union Ministry of Electronics and Information (MeitY) invited applications from 100 domestic companies, start-ups, and MSMEs under its Design Linked Incentive (DLI) Scheme.

Design Linked Incentive (DLI) Scheme:

- **Launched by:** Ministry of Electronics and Information (MeitY) in 2021.

- Implemented by: **C-DAC (Centre for Development of Advanced Computing)**, under **MeitY**.
- **Objective:** To reduce the problems of the domestic industry involved in semiconductor design to strengthen the **semiconductor chip design ecosystem** in the country.
- **Beneficiaries:**
 - Indian companies (Private Limited Company or a Public Limited Company)
 - It includes Indian MSMEs and Startups.

Component:

Under the DLI scheme, Approved companies can claim their expenditure/incentive in 3 schemes of DLI:

- **Design Infrastructure support:** Reimbursement of up to ₹30 Lakh per application for fabrication of design and post-silicon validation activities.
- **Product Design Linked Incentive (P-DLI):** Milestones linked reimbursement of up to 50% of the eligible expenditure subject to a ceiling of ₹15 Crore per application.
 - It is given for designing semiconductor goods and demonstrating them in the operational environment and volume of production.
- **Deployment Linked Incentive (DLI):** Reimbursement of 6-4% of net sales of designed semiconductor goods over 5 years subject to a ceiling of ₹30 Crore.

DO 5G TELECOM ROLL OUTS POSE THREAT TO AIRLINE SAFETY? AN EXPLAINER

Major passenger and cargo airlines have warned of a “catastrophic” aviation crisis from new 5G technology.

- The new 5G technology could **interfere with instruments** such as altimeters, which

measure how far above the ground an airplane is travelling.

- **Altimeters** operate in the **4.2-4.4 GHz range** and the concern is that the auctioned frequencies sit too close to this range.
- **No risk of unsafe interference** has been identified in Europe.

WHAT IS REvil, THE RANSOMWARE GROUP DISMANTLED BY RUSSIA AT US REQUEST

Recently, Ransomware group REvil has been dismantled by the Russian authorities.

- **REvil** (an amalgam of “ransomware” and “evil”), is a **Russia-based hacking organisation**.
- REvil works by threatening to publish the encrypted information on their page Happy Blog unless the ransom was received.

- Mostly the ransom was received in the form of **cryptocurrencies** due to perceived anonymity and ease of online payment.
- They also offer **ransomware as services (RaaS)**, by leasing the hacking technology to third-party hackers.

What is a ransomware?

- A Ransomware is a **file blocking virus** that encrypts files after infection.

- It encrypts the victim's files, making them inaccessible, and demands a ransom payment to decrypt them.

Examples: Trojan, WannaCry worm.

GLOBAL BURDEN OF BACTERIAL ANTIMICROBIAL RESISTANCE

Recently, a medical journal released data on antibiotic-resistant bacterial infections.

Highlights of study

- At least 1.2 million people died in 2019 as a direct result of antibiotic-resistant bacterial infections.
- **Antimicrobial resistance (AMR)** is now a **leading cause of death** worldwide, higher than HIV/AIDS or malaria.
- **Drug resistance in lower respiratory infections** – such as pneumonia – had the greatest impact on AMR disease burden.
- AMR poses a threat to people of **all ages**.
 - **Young children** were found to be at **particularly high risk**, with around **one in five deaths** attributable to AMR occurring in children aged **under five years**.
- Deaths caused directly by AMR were estimated to be **highest in Sub-Saharan Africa and South Asia**.
- It highlighted suggestions to combat AMR.
 - These include optimising the **use of existing antibiotics**, taking **greater action to monitor and control infections**, and **providing more funding to develop new antibiotics and treatments**.

Antimicrobial resistance (AMR)

- It is the ability of **microorganisms to persist** or grow in the presence of **drugs designed to inhibit or kill them**.

- Microorganisms that develop antimicrobial resistance are sometimes referred to as “**superbugs**”.
- It occurs when bacteria, viruses, fungi and parasites change over time and **no longer respond to medicines making infections harder to treat** and increasing the risk of **disease spread, severe illness and death**.
- It threatens the effective prevention and treatment of an ever-increasing range of infections caused by **bacteria, parasites, viruses and fungi**.

India's effort in response to AMR

National programme on AMR

- It was launched during **12th FYP in 2012-17**.
- Under this programme, **AMR Surveillance Network** has been **strengthened by establishing labs in State Medical College**

National Action Plan on Antimicrobial Resistance (NAP-AMR)

- Launched in 2017.
- **Aim:** to effectively **combat antimicrobial resistance in India**, and **contribute towards the global efforts to tackle this public health threat**.

AMR Research & International Collaboration

- **Indian council of medical research (ICMR) has taken initiatives to develop new drugs /medicines** through international collaborations in order to strengthen medical research in AMR.
- ICMR along with **Research Council of Norway (RCN) initiated a joint call** for research in antimicrobial resistance in 2017.
- ICMR along with **Federal Ministry of Education and Research (BMBF), Germany has a joint Indo-German collaboration for research on AMR.**

Global efforts

Global Research on Antimicrobial Resistance (GRAM)

- GRAM is the flagship project of the University of **Oxford Big Data Institute–IHME Strategic Partnership.**
- It was launched with support from the United Kingdom Department of **Health's Fleming Fund, the Wellcome Trust, and the Bill & Melinda Gates Foundation.**
- GRAM report estimates deaths linked to **23 pathogens and 88 pathogen-drug combinations** in 204 countries and territories in 2019.
- E coli, S aureus, K pneumoniae, S pneumoniae, A baumannii, and P aeruginosa are some example of drug resistance pathogens.

Global Action Plan on Antimicrobial Resistance (GAP)

- **World Health Assembly** adopted a global action plan on antimicrobial resistance in 2015.

Objectives:

- To **improve awareness and understanding of antimicrobial resistance** through effective communication, education and training;
- To **strengthen the knowledge and evidence base** through surveillance and research;
- To **reduce the incidence of infection** through effective sanitation, hygiene and infection prevention measures;
- To **optimize the use of antimicrobial medicines in human and animal health.**

World Antimicrobial Awareness Week

- It is celebrated from 18-24 November every year.
- The 2021 theme, **Spread Awareness, Stop Resistance.**
- **Aim:** to increase **awareness of global antimicrobial resistance** and to encourage best practices among the general public, health workers and policy makers to **avoid the further emergence and spread of drug-resistant infections.**

The Global Antimicrobial Resistance and Use Surveillance System (GLASS)

- Launched in 2015 by World Health Organisation.
- **Aim:** To fill **knowledge gaps and to inform strategies at all levels** to combat AMR.
- It incorporates data from **surveillance of AMR in humans, surveillance of the use of antimicrobial medicines, AMR in the food chain and in the environment.**

HOW HIGH TARIFFS ON ELECTRONIC GEARS MAY NEGATE PLI GAINS

India's policy of adopting high tariffs on the import of electronics components to reduce risks from global competition may prove to be counterproductive to its schemes aimed at increasing domestic production of electronic products.

Why Import Tariffs are Counterproductive?

- Companies which have extensive **global value chains** are reluctant to enter India when tariffs for components are high.
- The large **electronics market of India** may look attractive, but it is small in global terms.
- Moreover, India does not produce about 50% of the components on which **tariff has been increased**.
- Hence, the **impact of tariffs** is likely to be adverse on India's competitiveness

India's Performance in Global Electronics Market:

- India, China, Vietnam, Mexico and Thailand, encourage the **domestic production of electronic goods** in their geographies by adopting strategies like:
 - Attracting **foreign direct investment**.
 - Improving domestic capabilities and competitiveness.
 - **Increasing exports** and then linking their markets with global value chains.
- Since 1980, China has improved its ranking in terms of office and **telecom equipment export** from 35 to 1.
- Vietnam has become the **eighth largest exporter** in 2019.
- Mexico has steadily risen from 37th position in 1980s to 11th place.

- **Thailand**, which ranked 45 in 1980 has also consolidated its position in the top 15 **electronic product exporters**.
- **India**, which started at 40th position in the 1980s has gained and reached 28th position by 2019.

Impact of Import Tariffs on Electronics Industry:

- One major difference between Indian and rest of the countries is **heavy reliance on tariffs**.
 - It is due to such high tariffs that **investors** and **electronic component makers** from global markets shy away from India.
- Despite the size of the Indian economy, its participation in **exports and international trade** has remained low.
 - In the case of mobile phones, the size of the **domestic market** is expected to increase by \$55 billion I in 2025-26, whereas the **global market** is expected to reach \$625 billion by the same time.
- At present, the Indian domestic market is about **6.5 % of the global market**.
 - India's market share is not attractive enough for FDI to choose it as a location primarily on the basis of its domestic market, as Indian policies result in **cost inefficiencies** which create obstacles to accessing a much larger global market.
- India must keep its tariff at a bare minimum to ensure it remains competitive among its peers in the **Asian market**.

LONG BEFORE FACEBOOK AND INSTAGRAM, SOCIAL NETWORKING WAS DONE USING OSTRICH EGGSHELLS

Recently, Scientists have found that Ostrich eggshell beads were used by the people in eastern and southern

Africa for communication about 50,000 and 33,000 years ago.

- The Ostrich eggshell bead technology originated in **eastern Africa** and spread southward approximately via a **regional network**.
- This communication is the **oldest social network** ever identified.
- This coincides with a particularly **wet period in eastern Africa**.
- The beads **disappeared 33,000 years ago** due to a major shift in global climates as eastern Africa experienced a dramatic

reduction in precipitation as the tropical rain belt shifted southward.

- Ostrich eggshell beads are **ideal artefacts for understanding ancient social relationships**.
- They are the **world's oldest fully manufactured ornaments**, meaning that instead of relying on an item's natural size or shape, humans completely transformed the shells to produce beads.

HIMALAYAN BARNUSH COULD BE A KEY CANDIDATE FOR TREATMENT AGAINST CORONAVIRUS, STUDY FINDS

- A group of biologists have found Himalayan flowering tree.

- It possessing **antiviral properties** with a potential to be used in the treatment against **SARS-CoV-2**.

ISRO SUCCESSFULLY FIRES VIKAS ENGINE THAT WILL POWER GAGANYAAN MISSION TO SPACE

Recently, the Indian Space & Research Organisation (ISRO) successfully test-fired the Vikas engine.

- VIKAS (Vikram Ambalal Sarabhai) is a family of liquid-fuelled rocket engines conceptualized and designed by the Liquid Propulsion Systems Centre since the 1970s.
- It will power **Gaganyaan mission** into space.

- **Types of Vikas Engine:** High Thrust VIKAS Engine (**HTVE**) and High-Pressure VIKAS Engine (**HPVE**).
- The engine is used in the **Polar Satellite Launch Vehicle (PSLV)** and the **Geosynchronous Satellite Launch Vehicle (GSLV)** series of expendable launch vehicles for space launch use.

MOTION OF STARS HOLDS CLUE TO DARK MATTER SHAPE IN FAR AWAY GALAXIES

Scientists have found that out-of-plane bending events of the bar explain the shape of dark matter halos in barred galaxies.

- Out of plane **bending of the bar** in barred galaxies (central bar-shaped structure

composed of stars) is a rare violent bar thickening mechanism **known as buckling**.

Dark Matter:

- It is a **hypothetical form of matter**.
- It **forms the skeleton** on which galaxies form, evolve, and merge.
- The dark matter is thought to **account for approximately 85% of the matter** in the universe.

Evidences of Dark Matter:

- The primary evidence for dark matter comes from calculations showing that:
 - **Many galaxies would fly apart**
 - Galaxies would not have formed
 - The galaxies would not move as they do if they did not contain a large amount of unseen matter.
- Other lines of evidence include:
 - **Observations in gravitational lensing** and the cosmic microwave background.
 - Astronomical observations of the **observable universe's current structure**
 - The **formation and evolution of galaxies**
 - **Mass location** during galactic collisions
 - The **motion of galaxies** within galaxy clusters.

Dark Energy:

- It is a **theoretical form of energy** postulated to act in opposition to gravity.
- The dark energy occupies the entire universe, **accounting for most of the energy** in it and causing its expansion to accelerate.

Possible Explanations of Dark Energy:

Property of Space:

- One version of **Einstein's gravity theory**, the version that contains a cosmological constant, implies that **"empty space" can possess its own energy**.
- Because this energy is a property of space itself, it would not be diluted as space expands.
- As more space comes into existence, more of this energy-of-space would appear.
- As a result, this form of energy would cause the universe to expand faster and faster.

Quantum Theory of Matter:

- In this theory, "empty space" is actually **full of temporary ("virtual") particles** that continually form and then disappear.

Fifth Fundamental Force:

- There are **four fundamental forces** in the universe, and speculative theories have proposed a fifth force – something that can't be explained by the four forces.
- The four fundamental forces are: Gravitational Force, weak nuclear force, electromagnetic force and strong nuclear force in order of increasing strength.
- To hide or screen this fifth force, many models for dark energy use special mechanisms.
- However, none of the theories have been proved.
- Due to this, Dark energy has been noted as **"the most profound mystery in all of science"**.

Black Hole:

- A black hole is a **region of spacetime** where gravity is so strong that nothing – **no particles or even electromagnetic radiation** such as light – **can escape** from it.

- The theory of general relativity predicts that a **sufficiently compact mass** can deform spacetime to **form a black hole**.
- The **center** of the black hole is known as **singularity**, which has **zero volume and infinite density**.
- The singularity is hidden by the surface known as **event horizon**.

- Only the most massive stars—those of more than three solar masses—become black holes at the end of their lives.
 - One such supermassive black hole, **Sagittarius A***, exists at the center of the Milky Way Galaxy.
- Stars with a smaller amount of mass evolve into less compressed bodies, either white dwarfs or neutron stars.

FUNGI ASSOCIATED WITH BASAL STEM ROT FOUND

Recently, researchers from Kerala have discovered two new species of fungi from the genus Ganoderma that are associated with coconut stem rot.

- The two fungi species: **Ganoderma keralense** and **G. pseudoapplanatum**
- These fungi grow on the tree trunk and reduce the fertility and growth of **Coconut**

palm (Cocos nucifera) trees, even in the death of the plant.

- This disease is called **butt rot or basal stem rot disease of coconut**.
- Locally this disease has many names like **Ganoderma wilt (Andhra Pradesh), Anaberoga (Karnataka), Thanjavur wilt (Tamil Nadu), etc.**

SOLAR FLARE CAUSES RADIO BLACKOUT OVER INDIAN OCEAN, COULD SPARK MINOR GEOMAGNETIC STORMS

Recently, there was a shortwave radio blackout over the Indian ocean due to the emission of powerful **solar flares** from the sun.

Solar flare

- Flare is defined as a sudden, rapid, and intense variation in brightness.
- A solar flare is an **intense eruption of electromagnetic radiation** in the Sun's atmosphere.
- It occurs when magnetic energy that has built up in the solar atmosphere is suddenly released.
- Flares happen in active regions and are often, but not always, accompanied by coronal

mass ejections, solar particle events, and other solar phenomena.

Causes:

- Solar Flares occur when **accelerated charged particles**, mainly electrons, interact with the plasma medium.
 - The phenomenon of magnetic reconnection leads to this extreme acceleration of charged particles.

Classification:

- The modern classification system for solar flares uses the letters **A, B, C, M, or X**,

according to the peak flux in watts per square meter of soft X-rays with wavelengths **0.1 to 0.8 nanometres**.

- The biggest flares are known as **X-class flares**.
- The smallest ones are **A-class**, followed by B, C and M.

- **C-class** and smaller flares are too weak to noticeably affect Earth.
- **M-class flares** can cause brief radio blackouts at the poles and minor radiation storms that might endanger astronauts.
- **B-class** comes in the lowest class of solar flares.

CHEMISTS USE DNA TO BUILD THE WORLD'S TINIEST ANTENNA – “LIKE A TWO-WAY RADIO”

Recently, a team of chemists from the University of Montreal, Canada, has designed the world's smallest antenna (nanoantenna) using human DNA (Deoxyribonucleic acid).

World's Smallest Antenna:

- It is an '**easy-to-use device**', that will help in identifying new drugs and better

understanding natural and human-designed nanotechnologies.

- It is a five-nanometre long DNA antenna fitted with fluorescent ends.
- This nanoantenna has been **designed to monitor the motions of proteins**.
 - It observes the structural change of proteins over time.
 - The design of this device is **inspired by the 'Lego-like' properties of DNA**.

IMD WARNS OF COLD WAVE IN THESE STATES DURING NEXT 3-4 DAYS. SEE FULL FORECAST

Recently, India Meteorological Department (IMD) has predicted that Northwest and Central India, including Madhya Pradesh, will continue to face cold weather.

What is a cold wave?

- A cold wave is a meteorological event generally characterised by:
 - the **sharp drop of air temperature** near the surface, leading to extremely low values;
 - the **steep rise of pressure**;
 - **strengthening of wind speed**; or
 - associated with hazardous weather like frost and icing.

- Temperate, mountainous or coastal areas may have **wind chill factor** playing an important role in bringing down the actual minimum temperature.
- In context of India, occurrences of **extreme low temperature** in association with incursion of dry cold winds from north into the sub-continent are defined as cold waves.
 - The **northern parts of India** are influenced by transient disturbances in the mid latitude westerlies.

Impact of Cold Wave

- Cold waves have significant **effects on health** depending on the length of exposure, some even leading to death.
- An unexpected cold wave can cause frostbites, hypothermia, or other serious medical ailments
- It can cause **damage** to crops, horticulture, forest trees, livestock, fisheries, water supply, power supply, transportation, tourism, social activities, economy and other livelihood systems.
- It can also adversely affect wild animals, **transport sector and tourism sector**.
- It increases the **demand for energy sources**, as a lot of power is being consumed during cold wave.
- It **disrupts water supply**, due to freezing.
- It may also **impact the efficiency and operation** of other infrastructure like Internet of Things (IoT).

Criteria used to determine for Cold wave

- **World Meteorological Organisation (WMO)** has determined certain criteria for declaring a cold wave, which is followed by Indian Meteorological Department (IMD).
- In the plains, as per the IMD, a cold wave is declared when the **temperature goes below 4 degrees**.
- A cold wave is also declared when the **minimum temperature is 10 degrees Celsius or below** and is 4.5 notches less than normal.
- A "severe" cold wave is when the minimum temperature dips to 2 degrees Celsius or the departure from normal is more than 6.4 degrees Celsius.
- When declaring a cold wave, **wind chill factor** is taken into account.

Cold Day

- When maximum temperature is **less than or equal to 16°C in plains**, a 'cold day' is declared.

Factors for Cold Wave occurrence over India:

- A **build-up of a ridge** (an extended area of relatively high atmospheric pressure) in the jet stream over northwest Asia;
- **Formation of surface high-pressure** over north & central India;
- **Movement of cold air masses** in response to steering by upper-level winds;
- Triggering mechanism like a **strong westerly wave** approaching northwest India to enhance winds for transport cold air south eastward;
- **Extensive snow covers** over northwest Himalayas.

Cold Wave Frequency

- A **cold wave or severe cold wave (SCW)** spell is the duration where such conditions are continuously experienced, varying from one day to several days.
- The duration of most frequent CW/SCW spells in most sub-divisions is generally less than 1-2 days.
- The longest CW/SCW spells were experienced post-1989.

NDMA's strategy for cold wave management

The strategy for cold wave management comprises of:

- Identification of cold wave **risk and vulnerability assessment**
- Establish qualitative **early warning**, forecasting and alerts dissemination
- Develop **inter-agency coordination** at different levels
- Preparedness at the local level **health care**

- Structural & non-structural measures including cold wave related **programmes/schemes**
- Public awareness and **community outreach**
- **Capacity building** and training programmes

- **Collaboration** with private, non-government organisations and civil society
- **Research & development**
- **Assessing the impact** for reviewing and updating the plan.

ADDING RADIOACTIVE SUBSTANCES IN WEARABLES UNJUSTIFIED

Recently, Authority for Nuclear Safety and Radiation Protection (ANVS), Netherland issued a statement identifying wearable products, using negative ion technology, containing more radioactivity than legally permitted.

Negative Ion Technology:

- Negative ion technology uses **negative ions** in personal products.
- The minerals that produce these negative ions often include naturally occurring radioactive substances such as **uranium and thorium**.
- Negative ions are also made when sunlight, radiation, air, or water break down oxygen.

Uses:

- This technology is used in certain **silicone wristbands, quantum or scalar-energy pendants, and kinesthesiology** tape.
- These ions are said to **create positive vibes** and uplift the mood.
- They show the various mental and physical health benefits, such as stress reduction, better sleeping, respiration etc.
- These ions may also **act on pollutants**, make them negatively charged and get them collected on surfaces.
- It is currently being advertised as a **means to maintain health, balance energy, and improve well-being**.

Concerns:

- Radioactivity is the act of emitting radiation spontaneously.
- The **radiation** detected in some of negative ion technology products has been **higher than the background level** and, in some cases, high enough to require licensing.
- The minerals used in products contain varying levels of radioactivity. Thus, it can be difficult for the consumer to know exactly about the radioactivity.
- Exposure to ionizing radiation can cause **adverse health effects** and wearing the products for extended periods could pose health risks that include tissue and DNA damage.
- Exposure can also cause severe harmful effects such as: **Skin burns, Acute radiation sickness** that causes cancer and hair fall, temporary reduction in white blood cells, etc.

Efforts:

- The International Atomic Energy Association (IAEA) published a specific safety guide titled **Radiation Safety for Consumer Products (2016)**.
- The IAEA considers that the frivolous use of radiation or radioactive substances in toys and personal jewellery, is unjustified.

- In India, the **Atomic Energy (Radiation Protection) Rules, 2004** contains

provisions consistent with those of the IAEA.

ISRO'S SSLV, A SMALL SATELLITE LAUNCHER WITH BIG PROSPECTS AHEAD

ISRO will launch its indigenous new launch rockets, called the Small Satellite Launch Vehicle (SSLV) soon.

SSLV:

- It is **3 stage all solid vehicle** with a capability to launch up to 500 kg satellite mass into 500 km **Low Earth Orbit**.

The vehicle would help in:

- Reduced turn-around time
- Launch on demand
- Cost optimization for realization and operation
- Flexibility in accommodating multiple satellites
- Minimum launch infrastructure requirements
- Heritage of proven design practices

WHY MODERNA'S EXPERIMENTAL HIV VACCINE MAY BE SIGNIFICANT

Biotech firm Moderna has started trials on an mRNA (Messenger ribonucleic acid) vaccine, which broadly target to neutralise HIV-1 antibodies (bNAbs) and multiple HIV strains.

- The vaccine uses the same technology as **Moderna's Covid 19 vaccine**.

mRNA

- mRNA is the **set of instructions** by which cells **make all proteins** and **send them to various parts** of the body.
- It is a **single-stranded molecule** that carries genetic code from DNA in a cell's nucleus to ribosomes, the **cell's protein-making machinery**.

mRNA vaccine

- It is a type of vaccine that **uses a copy of a molecule called mRNA** to produce an immune response.
- It **delivers molecules** of antigen-encoding mRNA into immune cells, which use the designed mRNA as a blueprint to build foreign protein.

How mRNA vaccine works?

- It works by **introducing a piece of mRNA** that corresponds to a viral protein.
- Using this mRNA blueprint, **cells produce the viral protein**.
- The immune system recognizes that the **protein is foreign** and produces specialized proteins called **antibodies**.
- Antibodies help **protect the body against infection** by recognizing individual viruses or other pathogens, attaching to them, and **marking the pathogens for destruction**.

- Once produced, **antibodies remain in the body**, even after the body has rid itself of the pathogen, so that the immune system can quickly respond if exposed again.

HIV (human immunodeficiency virus)

- It is a **virus** that attacks the body's immune system.
- If HIV is not treated, it can lead to **AIDS (acquired immunodeficiency syndrome)**.

Where did HIV come from?

- HIV infection in humans came from a **type of chimpanzee** in Central Africa.
- The chimpanzee version of the virus (called simian immunodeficiency virus, or SIV) was **probably passed to humans when humans hunted these chimpanzees for meat** and came in contact with their infected blood.
- Studies show that HIV may have jumped from chimpanzees to humans as far back as the **late 1800s**.

Symptoms

- Some people **have flu-like symptoms within 2 to 4 weeks** after infection (called acute HIV infection).
- Possible symptoms include **Fever, Chills, Rash, Night sweats, Muscle aches, Sore throat, Fatigue, Swollen lymph nodes, and Mouth ulcers**.

Stages of HIV

Stage 1: Acute HIV Infection

- People have a **large amount of HIV in their blood**.
- They are **very contagious**.

- People might have **flu-like symptoms**.

Stage 2: Chronic HIV Infection

- This stage is also called **asymptomatic HIV infection or clinical latency**.
- HIV is still active but **reproduces at very low levels**.
- People **may not have any symptoms** or get sick during this phase.
- Without taking HIV medicine, **this period may last a decade or longer**, but some may progress faster.
- People can **transmit HIV** in this phase.

Stage 3: Acquired Immunodeficiency Syndrome (AIDS)

- This is the **most severe phase of HIV infection**.
- People with AIDS have such badly damaged immune systems that they get an **increasing number of severe illnesses, called opportunistic infections**.
- People with AIDS can have a high viral load and be very infectious.

Burden of disease

- According to the **World Health Organization (WHO)**, HIV continues to be a major global public health issue having **claimed 36.3 million lives so far**.
- India has **around 21 lakh people** living with HIV.
 - Every year an **estimated 68,000** new infections are added.
- However, HIV infection has become a **manageable chronic health condition** because of increasing access to **effective prevention, diagnosis, treatment and care including for opportunistic infections**

NeoCoV – WHAT IT IS AND WHAT IT IS NOT?

Recently, researchers in China explored how coronaviruses that are similar to MERS-CoV interact with different receptors in different host cells, which describes the NeoCoV coronavirus.

NeoCoV:

- NeoCoV is a term being used to refer to a **virus variant** linked to **MERS-CoV**.
- MERS-CoV belongs to the larger **coronavirus family** and is one of the seven known coronaviruses that can infect humans.

- **NeoCoV** is a possible variant of this particular coronavirus.
- It is the **closest MERS-CoV relative yet discovered** and
- It is **found in bats** and can efficiently use some types of bats **ACE2** to cause an infection.
- **ACE2** are cells that are called **receptors** in biological terms.
- It cannot interact with **human receptors**.
- In its current form, the virus cannot infect humans.



PGCIL CELEBRATES FIRST ANNIVERSARY OF ONE NATION-ONE GRID-ONE FREQUENCY

Recently, State-owned Power Grid Corp. of India Ltd (PGCIL) celebrated the first anniversary of One Nation-One Grid-One Frequency.

One Nation One Grid One Frequency:

- **Initially**, grid management in the country was done on a **regional basis**.
- **State grids** were **interconnected to form a regional grid** and **India** was **demarcated** into **5 regions** namely Northern, Eastern, Western, North Eastern and Southern regions.

- The initial inter-regional links were planned for exchange of operational surpluses amongst the regions.
- Later, when the planning graduated from regional self-sufficiency to **National basis**, the Inter-regional links were planned associated with the generation projects that had **beneficiaries across the regional boundaries**.
- **One Nation One Grid** synchronously **connects all the regional grids** and there is **one national frequency**.
- The range of national frequency is kept between 49.9 Hertz to 50.05 Hertz.

Importance of One Frequency:

- Providing electricity at a national scale multiple frequencies cannot operate alongside each other without damaging equipment. Hence one single frequency is required across the country for seamless transmission of power.

Benefits of One Nation-One Grid-One Frequency:

- **Matching Demand-Supply:**
 - Synchronization of all regional grids will help in **optimal utilization of scarce natural resources** by transfer of power from resource centric regions to load centric regions.
- **Development of Electricity Market:**
 - It will pave the way for **establishment of a vibrant Electricity market** facilitating trading of power across regions.

HC ALLOWS WOMAN TO TERMINATE 28-WEEK PREGNANCY

Recently, Delhi HC allowed a woman to terminate her 28 weeks pregnancy as the foetus suffers from a rare congenital heart disease.

Medical termination of pregnancy (MTP) amendment act 2021

- **Aim:** To access of women to safe and legal abortion services on therapeutic, eugenic, humanitarian or social grounds.

Features

- Enhancing the upper gestation limit from **20 to 24 weeks** for special categories of women which would include
 - Survivors of rape
 - Victims of incest

- Other vulnerable women (like differently-abled women, minors).
- Opinion of only **one provider** will be required up to 20 weeks of gestation and of two providers for termination of pregnancy of 20-24 weeks of gestation.
- **Upper gestation** limit not to apply in cases of substantial foetal abnormalities diagnosed by Medical Board.
- Name and other particulars of a woman whose pregnancy has been terminated shall not be **revealed** except to a person authorised in any law for the time being in force.
- The ground of failure of **contraceptive** has been extended to women and her partner.
- It increases the **ambit** and access of women to safe abortion services.

₹8 LAKH INCOME 'REASONABLE' CAP FOR EWS QUOTA, CENTRE TELLS SC

A government committee report in the Supreme Court has said that income is a feasible criterion for defining the Economical Weaker Sections.

Genesis:

- The **Supreme Court (SC) raised questions** on Centre's decision to raise the economically weaker sections (EWS) criteria limit to ₹8 lakh.
- SC also asked for clarification on Centre's part on how it decided the limit of ₹8 lakh.
- The Union Government then decided to **revisit the criteria** set out for eligibility for its 10% reservation under the economically weaker sections (EWS) category.
- **Ajay Bhushan Pandey Committee** was setup to review the criteria.
- The committee **recommended continuance** of Rs 8 lakh income limit.

Economically Weaker Section Quota (EWS):

- The **10% reservation** was introduced through the **103rd Constitution Amendment** and enforced in January 2019.
- The EWS reservation bill (**i.e., Constitution (124th Amendment) Bill, 2019**) will be in **addition to the existing reservation**.
- It added **Clause (6) to Article 15** to empower the Government to introduce special provisions for the EWS.
- It allows **reservation in educational institutions**, both public and private, whether aided or unaided, excluding those run by minority institutions.
- It also **added Clause (6) to Article 16** to facilitate **reservation in employment**.

- This quota **applies to all those who;**
 - are not covered in the existing quotas.
 - have family income below Rs. 8 lakh a year.
 - Income from all sources such as salary, business, agriculture and profession for the financial year prior to the application.
 - have agricultural land below 5 acres.
 - has house below 1000 sq. ft.
 - has a plot of 100 yard or below in a notified municipal area.
 - has a plot a 200 yard or below in a non-notified municipal area.
- The **states have the sole discretion** to apply the quota in state run educational institutions and state government jobs.

Arguments against EWS quota:

- It **violates the Basic Structure of the Constitution**.
- The special protections guaranteed to socially disadvantaged groups are part of the Basic Structure and that the 103rd Amendment departs from this by promising **special protections** on the sole basis of economic status.
- It **violates the Supreme Court's 1992 ruling in Indra Sawhney & Others v Union of India**, which upheld the **Mandal Report** and capped reservations at 50%.
- In the ruling, the court held that economic backwardness cannot be the sole criterion for identifying backward class
- The **private, unaided educational institutions** have argued that their **fundamental right to practise a trade/profession is violated** when the state compels them to implement its reservation policy and admit students on any criteria other than merit.

- The **upper limit** of income of Rs. 8 lakh per annum for being eligible for the quota is **questionable**.
- The per capita income or GDP in all States and the purchasing power in the rural and urban areas are different, while a single income limit is formulated for the whole country.

Creamy Layer:

- Creamy layer is a term which **refers to some members of a backward class** who are highly **advanced socially as well as economically and educationally**.
- They constitute the **forward section of that particular backward class**.
- They are **not eligible for government-sponsored** educational and professional **benefit programs**.
- The term was introduced by the **Sattanathan Commission in 1971**, which directed that the "creamy layer" should be excluded from the reservations (quotas) of civil posts.
- It was also **identified later by Justice Ram Nandan Committee in 1993**.

Criteria:

- For those not in government, the **current threshold** is an income of **Rs 8 lakh per year**.
- For children of government employees, the threshold is based on their parents' rank and not income.

Criteria for Creamy Layer vs Criteria for EWS:

- The income criterion for the EWS is **much more stringent** than the one for the OBC creamy layer.
- First, the EWS's **criteria** relates to the **financial year prior to the year of application** whereas the income criterion for the **creamy layer in OBC** category is applicable to **gross annual income for three consecutive years**.
- Secondly, in case of deciding the **OBC creamy layer**, income from **salaries, agriculture and traditional artisanal professions** are **excluded** from the consideration whereas the Rs 8 lakh criteria for EWS **includes that from all sources, including farming**.

36,000 COUPLES IN QUEUE, BUT CARA HAS 1,936 KIDS

The quarterly data analysis report released by the voluntary organization states that a total of 1,936 children were legally available with the **Central Adoption Resource Authority (CARA)**.

Central Adoption Resource Authority (CARA)

- CARA is a statutory body of **the Ministry of Women & Child Development**, Government of India.
- It functions as the nodal body for the adoption of Indian children and

- It is mandated to monitor and regulate in-country and inter-country adoptions.
- It is designated as the Central Authority to deal with inter-country adoptions following the provisions of the **Hague Convention on Inter-country Adoption, 1993**.
- It primarily deals with the adoption of orphan, abandoned, and surrendered children through its recognized adoption agencies.

Functions and Roles:

- To promote & regulate In-country adoptions and to facilitate Inter-state adoptions in coordination with State Agency;
- To frame regulations on adoption and related matters from time to time as necessary.
- To carry out the functions of the Central Authority under the **Hague Convention on Protection of Children and Cooperation** in respect of Intercountry Adoption;
- Monitor and regulate the procedure for in-country adoption.
- Receive applications of a Non-Resident Indian or Overseas Citizens of India through an authorized adoption agency or Central Authority.
- Issue **No Objection Certificate** in all cases of inter-country adoptions.

- Intimate the immigration authorities of India and the receiving country of the child about the inter-country adoption cases.
- Conduct research, documentation, and **publication on adoption and related matters**.
- Provide support and guidance to State Adoption Resource Agencies.
- **Establish uniform standards and indicators, relating to:**
 - Adoption procedure related to the orphan abandoned and surrendered children and also related to relative adoptions.
 - **Quality child care** standards in Specialised Adoption Agency and Child Care Institution.
 - **Monitoring and supervision** of service providers.
 - Standardization of documents in cases of adoptions.
- **Safeguards and ethical practices including online applications** for facilitating hassle-free adoptions.

SAVITRIBAI PHULE'S BIRTH ANNIVERSARY: ALL ABOUT INDIA'S FIRST FEMALE TEACHER & FEMINIST ICON

January 3 marks the birth anniversary of a social reformer and feminist icon Savitribai Phule

Savitribai Phule

- **Born:** 3 January 1831, Satara, Bombay
- She was an Indian **social reformer, educationalist, and poet** from Maharashtra.
- She is **regarded** as the **first female teacher of India**.
- Along with her husband, Jyotirao Phule, she played an important and vital role in improving women's rights in India.

- She is regarded as the **mother of Indian feminism**.
- Savitribai and her husband founded one of the **first Indian girls' school in Pune**, at Bhide wada in 1848.
- She worked to **abolish the discrimination and unfair treatment of people** based on caste and gender.
- She was **against the child marriage** and strongly **opposed the Sati tradition**.
- She **Opened a women's shelter** called the **Home for the Prevention of Infanticide** where widows could deliver their children

- She also used her voice to **raise awareness regarding widow remarriage.**
- She established the **Mahila Seva Mandal** to raise awareness for issues concerning **women's rights.**

- She published **Kavya Phule** in 1854 and **Bavan Kashi Subodh Ratnakar** in 1892.
- **Died:** 10 March 1897 (aged 66) Pune, Bombay

NEAT 3.0: GAME-CHANGER TO BRIDGE THE EDUCATIONAL DIGITAL DIVIDE IN INDIA

Union Education Minister recently launched NEAT 3.0.

NEAT 3.0

- It is a **single platform** to provide the best-developed **ed-tech solutions and courses** to students of the country.

Significance

- It will **bridge the digital divide**, especially among the **economically disadvantaged students.**
- **Helpful in fulfilling the knowledge-based requirement** of India and the world.
- Helps in bettering learning outcomes, **developing employable skills and overcoming learning loss.**

National Educational Alliance for Technology (NEAT)

- It is an initiative to **provide the use of best-developed technological solutions in the education sector.**
- **Aim:** To enhance the employability of the youth on a single platform for learners' convenience.
- These solutions use **Artificial Intelligence for a personalized and customized learning experience** for better learning outcomes and skill development in the niche areas.
- **AICTE (All India Council for Technical Education), MoE (Ministry of Education) is acting as the facilitator** in the process while ensuring that the solutions are freely available to a large number of **socially and economically backward students.**

IRDAI PROPOSES A SEPARATE REGULATOR FOR HEALTHCARE SEGMENT

Insurance Regulatory and Development Authority of India (IRDAI) has proposed for a separate regulator for the healthcare segment.

Tariff in Hospitals:

- Tariff in hospitals is the **price of hospital services** set by regulating authorities.

- **Purchasers** i.e., government, health insurer, patients, etc., must **pay that financial amount** to the hospital authorities in **exchange of receiving services.**
- The hospital service tariff **affects health system costs**, hospital efficiency, **access to health services**, and the satisfaction of both patients and hospital service providers.

Tariff Structure of Hospitals:

Individual hospital empanelment process:

- Health care schemes and private insurance have individual hospital empanelment process, which **replicates various activities** and contributes to **inefficiency and duplication of processes**.

No regulation:

- Hospitals keep **changing tariffs** on a regular basis.
- There is **no body to regulate** them on tariff structure and grading.

Unequal inflation:

- The regulator **does not allow** insurance companies to raise premium every year though there is around **10-15 per cent inflation** of hospital charges at present.

Inadequate Infrastructure:

- IRDAI **doesn't have the infrastructure** to regulate hospitals.

Common empanelment portal:

- IRDAI recommended to have **common empanelment portal** which can be utilised by all the schemes/insurance companies with **standardised empanelment criteria**.

Separate Regulator:

- IRDAI has proposed that either there must be a separate regulator for the healthcare segment or IRDAI must be allowed to **regulate hospitals**.

Standardization:

- IRDAI is striving for **standardisation of charges** of medical procedures.

ONLY 0.4 MILLION OF SIX MILLIOND SCHEDULED CASTE STUDENTS RECEIVE SCHOLARSHIP

Currently, 5.5 million post-matriculation scholarships meant for Scheduled Caste students remain unawarded across several states.

Post Metric Scholar Scheme

- Post Matric Scholarship scheme is a **Centrally Sponsored Scheme**.
- The Scheme provides financial assistance to the **Scheduled Caste students studying at the post matriculation or post-secondary stage** to enable them to complete their education.

- It is awarded by the government of the State/Union Territory to which the applicant belongs.
- Scholarships are given for the study of all recognized post-matriculation or post-secondary courses pursued in recognized institutions, with exceptions.

Eligibility:

- **Nationals of India only**.
- Students whose parents/guardians' income does not exceed **Rs. 2,50,000/- per annum**.

Passed the Matriculation or Higher Secondary or any higher examination of a recognized

University or **Board of Secondary Education**

UJALA COMPLETES 7 YEARS OF ENERGY-EFFICIENT AND AFFORDABLE LED DISTRIBUTION

Recently, Ministry of Power successfully completed seven years of distributing and selling LED lights under its flagship UJALA programme.

UJALA Scheme:

- **Unnati Jyoti by Affordable LEDs for All (UJALA)** was launched in 2015.
- It has evolved to be **world's largest zero subsidy domestic lighting programme**.
- **Aim:** To address concerns like high electrification cost and high emissions that result from inefficient lighting.
- **Implementing agencies:** Electricity Distribution Company (EDC), Energy Efficiency Services Limited (EESL).

Eligibility of Acquiring LED Bulbs:

- Every domestic household having a metered connection from their respective Electricity Distribution Company is eligible to get the LED bulbs.
- The consumer can purchase the LED on EMI or on upfront payment by paying the full amount.

Working of UJALA:

- EESL distributes **LED bulbs** to households at 40 % of market price.
- Total upfront investment and risk coverage borne by EESL.

Achievements:

- More than 36.78 crore LEDs have been distributed across the country.
- The programme has resulted in massive **energy savings**.
 - 47,778 million kWh per annum energy has been saved along with 3,86 crore tonnes of reduction in CO₂ emissions.
- It has helped in reducing annual household **electricity bills**.
- It provides an impetus to the **domestic lighting industry**.
 - It encourages **Make in India** as domestic manufacturing of LED bulbs, which has increased from 1 lakh per month to 40 million per month.
- It provides **economies of scale** to manufacturers through regular bulk procurement.
 - This enables manufacturers to bring down the cost of LEDs for retail segment as well.
 - The cost of LED bulb has come by down by 85 % (from INR 300-350 per bulb to INR 70-80 per bulb).

GOVT LAUNCHES SIX BRANDS DEVELOPED AS PART OF 'ONE DISTRICT-ONE PRODUCT' APPROACH UNDER PMFME SCHEME

Union Minister for Ministry of Food Processing Industries launched six One District One Product brands under the Pradhan Mantri Formalisation of Micro food processing Enterprises (PMFME).

One District One Product

- **Launch by:** Uttar Pradesh government in 2018.
- It was operationally merged with 'Districts as Export Hub' initiative being implemented by DGFT, Department of Commerce, with Department for Promotion of Industry and Internal Trade (DPIIT) as a major stakeholder.
- The idea is to **select, brand, and promote One Product from each District of the country.**
- **Aim:** For promoting exports, promoting manufacturing & services industry in the district and generate employment in the district.
- The States would identify the food product for a **district**, keeping in perspective the focus of the scheme on **perishables**.
- The ODOP product could be a **perishable agri produce**, cereal-based product, or a food product widely produced in a district.

Pradhan Mantri Formalisation of Micro Food Processing Enterprises (PMFME) scheme

- **Launched:** Ministry of Food Processing Industries in 2020 as a **Centrally Sponsored Scheme**
- **Aim:** To enhance the competitiveness of existing individual micro-enterprises in the unorganized segment of the food processing industry.
- Implemented over a 5-year period from **2020-21 to 2024-25**.

Objective

- To address the **challenges** faced by the **micro-enterprises** and to tap the potential of groups and cooperatives in supporting the upgradation and formalization of these enterprises.
- Increased access to **credit** by existing micro food processing entrepreneurs, FPOs, Self Help Groups, and Co-operatives.
- Integration with an organized **supply chain** by strengthening branding & marketing.
- Support for the transition of existing **2,00,000** enterprises into the formal framework.
- Increased access to **common services** like common processing facility, laboratories, storage, packaging, marketing, and incubation services.
- **Strengthening** of institutions, research, and training in the food processing sector.
- Increased access for the enterprises, to professional and technical support.

SMART CITIES AND ACADEMIA TOWARDS ACTION & RESEARCH (SAAR) TOWARDS ACTION AND RESEARCH

Recently, the union Ministry of Housing & Urban Affairs (MoHUA) has launched "Smart cities and Academia Towards Action & Research (SAAR)" program under the Smart Cities Mission.

Smart cities and Academia Towards Action & Research (SAAR)

- SAAR is a combined **initiative of MoHUA, National Institute of Urban**

Affairs (NIUA) and other 15 premier architecture & planning institutes of India.

- Under SAAR, the Indian academic institutions will be working with MoHUA's Smart Cities, to document the projects undertaken by **the Smart Cities Mission**.
- This documenting process is aimed to capture the learnings from best practices, provide opportunities on urban development projects to students, and enable real-time information flow between urban practitioners and academia.
- The SAAR compendium will also act as a **first point of reference for future research** in the field of urbanization.

Smart Cities Mission:

- **Scheme by:** Ministry of housing and urban affairs (MOHUA), launched in 2015.
- **Aim:** Sustainable and inclusive development of 100 smart cities having

quality urban infrastructure, including sanitation and smart solution like, affordable housing, CCTV, parking etc.

- **Component:** It has 3 strategic components, namely; i) City improvement (retrofitting), ii) City renewal (redevelopment) and iii) city extension (Greenfield development) plus a Pan-city initiative in which Smart Solutions are applied covering larger parts of the city.

Funding:

- Averagely 100 crore rupees per city will be given by centre. Rest money come from bonds, ULBs, PPP mode, state government etc.
- Direct funding of 45% from state and centre, 21% funding from other schemes of state and centre for ULB, 21% funding from PPP modal., Loans/Debt from source like ULB bonds etc. (4%), Own sources (1%), Other sources (8%).

OVER 65 LAKH INDIANS ENROLLED UNDER ATAL PENSION YOJANA IN FY22

Recently in the financial year, 2021-22 more than 65 lakh subscribers enrolled for the Atal Pension Yojana.

Atal Pension Yojana (APY)

- It is an Indian Government Scheme for the old age income security of the **unorganized workers**.
- The scheme is administered by the **Pension Fund Regulatory and Development Authority (PFRDA)** through NPS architecture.

Aim:

- It is focused on encouraging and enabling them to **save for their retirement**.

- To address the longevity risks among the workers in the unorganized sector and to **encourage the workers in the unorganized sector** to voluntarily save for their retirement.

Eligibility:

- All citizens of India aged between 18-40 years.

Benefits:

- Guaranteed minimum monthly pension for the subscribers ranging between **Rs. 1000 and Rs. 5000 per month**.

- The government will also **co-contribute 50% of the subscriber's** contribution or **Rs. 1000 per annum**, whichever is lower.
- Government co-contribution is available for those who are not covered by any Statutory Social Security Schemes and are not the income taxpayer.
- The exit from **APY** is permitted at the age of **60 with 100% annuitisation of pension**

wealth. On exit, the pension would be available to the subscriber.

- In case of death of subscriber, the pension would be available to the spouse and on the death of both of them (subscriber and spouse), the pension corpus would be returned to the nominee.

SUGARCANE BREEDING INSTITUTE LAUNCHES TRIBAL INTERVENTION PROJECT IN ANAMALAI TIGER RESERVE

Recently, Sugarcane Breeding Institute, in collaboration with Anamalai Tiger Reserve (ATR), conducted a campaign on tribal intervention.

- The project was finalised based on a systematic need assessment by conduct of **focus groups** among two tribes namely **Malasar and Malai Malasar**.

Anamalai Tiger Reserve:

- It is a **protected area** in the Anaimalai Hills of Western Ghats in **Tamil Nadu**.
- It is **one of the four Tiger Reserves** in Tamil Nadu.
- It was declared as a Tiger reserve in the year 2007.
- It is surrounded by Parambikulam Tiger Reserve on the East, Chinnar Wildlife Sanctuary and Eravikulam National Park on the South Western side.
- **Fauna:** Bengal tiger, Indian elephant, Indian leopard, Dhole, Lion-tailed macaque and Indian brown mongoose.

- **Flora:** tropical and subtropical moist broadleaf forests and East Deccan dry evergreen forests and montane shola-grassland.
- The six indigenous tribes living around the area are: **Kadars, Malasars, Malaimalasar, Pulaiyars Muduvars and Eravallan (Eravalar)**.

Malasar Tribe:

- Malasar are a **designated Scheduled Tribe** in the Indian states of **Kerala and Tamil Nadu**.
- The Malasar are one of the **earliest known inhabitants of the Western Ghats**, in Anaimalai Hills.
- They are a **forest tribe** living by **hill cultivation and day labour**.
- Malasar is an **unclassified Southern Dravidian language**.

POSH ACT: BOMBAY HIGH COURT GUIDELINES CHALLENGED IN SUPREME COURT

A petition has been filed in the Supreme Court challenging guidelines issued by the Bombay High Court in cases under the Protection of Women from Sexual Harassment (POSH) Act.

- High court ordered a **blanket bar on parties** and advocates from sharing records, including orders and judgments, with the media.
- It also stated that cases can be either heard **“in-camera” or in the judge’s chamber**, and no reporting without the nod of the judge will be permitted.

Arguments of petitioners

- Petitioner said that order was a **“death blow” to freedom of speech and expression** enshrined under Article 19.
- **Public discourse plays a crucial role** in shaping the nature of legal entitlements that are delivered to women, in matters of social justice and women empowerment.
- Order may have a **“ripple effect”** and deter survivors from approaching courts as well as setting a dangerous precedent for trial cases.
- Order will serve as a **tool for powerful men to continue to sexually harass women** and thereafter suppress women’s voices on social media and in news media with the help of such gag orders.

Protection of Women Against Sexual Harassment Act, 2013

- **No woman** shall be subjected to sexual harassment at any workplace.
- **Every employer of a workplace** shall, by an order in writing, constitute a Committee to be known as **“Internal Complaints Committee”**.
- ICC is required to be constituted at every office /branch/site office of an organisation **having 10 or more workers**.

- Any aggrieved woman may make, **in writing, a complaint of sexual Harassment at workplace** to the ICC, if so constituted or **Local Committee (LCC)**.
- The complaint can be filed **within 3 months** of the said harassment happening.
 - This **time can be increased** by the committees by another 3 months.
- **Any relative, psychologist, friends, co-workers** have the power to file the complaint for the victim.
- The ICC and LCC can transfer the duties of respondent’s duty towards the victim to other employees, **transfer of the victim to another branch or workplace** and they can be granted a **leave for up to 3 months**.

JS Verma Committee

- **Mandate:** to recommend **amendments to the Criminal Law** so as to provide for **quicker trial and enhanced punishment** for criminals accused of committing **sexual assault against women**.
- Committee submitted its report **in January 2013**.

Recommendation

- **Domestic workers** should be included within the purview of the Bill.
- **The employer** should pay **compensation** to the woman who has suffered sexual harassment.
- **Setting up of an employment tribunal** instead of an internal complaint committee (ICC).
- **Tribunal** may adopt its **own procedure** to deal with each complaint.
- Committee said **Sexual Harassment Act** did not reflect the spirit of the **Vishakha guideline**.
 - **“Vishaka Guidelines”** were stipulated by the Supreme Court of India, **in Vishaka and**

others v State of Rajasthan case in 1997, regarding **sexual harassment at workplace**.

- **Employer** should be **held liable** if:

○

- **Sexual misconduct** is persistent in the premises.
- He or she **facilitated** sexual harassment.
- Employer **fails to forward** a complaint to the tribunal

SUSTAINABLE FARMING IN BANSWARA CREATES NEW LIVELIHOOD SOURCES

A **sustainable natural farming** system, adopted in southern Rajasthan's **Banswara district** – **Amlipara village**, has created new **livelihood sources** and brought **food security** to indigenous tribal communities.

Amlipara model

- The model entails adoption of **organic farming, manure, medicines and pesticides** and **establishment of vermicompost** units at agricultural fields.
- The **locally prepared organic manure** is used for growing maize, wheat, urad and other crops.
- Amlipara is a **village in Rajasthan's Banswara district**.

WHY DID THE MAYA CIVILISATION COLLAPSE? WE DON'T KNOW YET, BUT DROUGHT WAS LIKELY NOT THE CAUSE: STUDY

According to a new study, the Maya civilization may have had access to nearly 500 edible plants, many of which were highly resistant to drought.

Highlights:

- The Maya people **faced starvation** because of their dependence on **drought-sensitive crops** such as corn, beans and squash.
- They could have turned to chaya and cassava to meet their carbohydrates and protein needs.
- Chaya is a shrub whose leaves are high in **protein, iron, potassium and calcium**.
- **Social and economic upheaval** likely played a key role in the decline of civilization.
- Also, **climate change** has negatively affected the yield of maize and wheat in low-latitude areas.

Maya Civilization:

- The Maya are an indigenous people of **Mexico and Central America**.
- The civilization originated in the **Yucatan Peninsula**.
- It flourished between 600 and 800 AD.
- It developed in the area that today comprises **southeastern Mexico, Guatemala and Belize**, the western portions of **Honduras and El Salvador**.
- The designation Maya comes from the ancient Yucatan city of Mayapan, the last capital of a Mayan Kingdom in the Post-Classic Period (950-1524) CE.

Features:

- They had their own **calendars**, farming methods, **writing systems and religion**.
- They built **palaces**, pyramids, ceremonial structures and **temple observatories**.
- The Mayans had different **Gods and Goddesses**.
 - Chaac was the God of rain and storms.
 - Itzamna was one of the creator Gods and was a patron of learning.
 - Awilix was the Goddess of night and the moon
- The Mayans had a **writing system** where they used **hieroglyphics**.

- **Hieroglyphics** are **signs** that make up sounds and words.
- There were up to 800 glyphs in their writing system.

Collapse:

- Between 800 and 950 AD, many of the southern cities were abandoned.
- This period is called the collapse of the Classic Maya civilizations.

SKOCH AWARD

Why in News?

Mission Parvarish earned the SKOCH Award for **southern Assam's Cachar** district.

- **Mission Parvarish** aims to **combat malnourishment among children** aged six months to five years.

Instituted in **2003**, SKOCH award is given to the people and Projects that make India a better nation.

- **Given by:** SKOCH Group (a think tank)
- The SKOCH Award covers the best of efforts in **digital, financial and social inclusion**.
- The domains for receiving the awards are:
 - Citizen service delivery
 - Capacity building and empowerment
 - Corporate governance
 - Change management
 - Inclusive growth
 - Excellence in technology and application

GOVERNMENT RELEASES REVISED UNIVERSAL ACCESSIBILITY GUIDELINES

Recently, Ministry of Housing and Urban Affairs has released harmonised Guidelines and Standards for Universal Accessibility in India.

- The guidelines are a revision of the **Harmonised Guidelines and Space Standards for Barrier-Free Built Environment** for Persons with Disabilities and Elderly Persons.

Guidelines:

- **Aim:** Bringing the narrative of **accessibility** and universal design of every sector and element of built environment.
- **Applicability:** The guidelines are not just for **persons with disabilities (PwD)**, but for those involved in planning projects, from

the construction of government buildings to master-planning cities.

- Earlier, the guidelines were for creating a barrier-free environment, but new guidelines are focusing on **universal accessibility**.

Key points of the guidelines

- While making public buildings and transport fully accessible for wheelchair users is

covered in the guidelines, **other users who may experience temporary problems** have also been considered.

- For instance, a parent pushing a child's pram while carrying groceries and women wearing saris.
- It calls for accessibility **symbols** for person with disabilities, family-friendly facilities and transgender to be inclusively incorporated among the symbols for other user groups.

TN GOVERNMENT ALLOWS JALLIKATTU EVENTS DESPITE COVID-19 SURGE

Recently, the Tamil Nadu state government allowed Jallikattu events despite increasing cases of COVID-19.

Jallikattu:

- It is a popular **traditional bull-taming sport** in **Tamil Nadu**, during **Pongal celebrations**.
- It is also known as **eru thazhuvuthal** and **manjuvirattu**.
- **Local variants:** Vadi manjuvirattu, Veli virattu, Vaṭam manjuvirattu.

- In this, a hungry and angry bull is released towards the open crowd. The crowd barehanded tries to control the angry bull, until the bull escapes the crowd.
- Mostly, the **Zebu (Bos Indicus), Pulikulam, or Kangayam breeds of bulls are used** for such events.
- Historically, it was first played by '**Ayar**' people of '**Mullai**' region of Ancient Tamil Nadu(400-1000BCE).

TRANSGENDER PERSONS TO GET SEPARATE JAIL WARDS, FACILITIES

Transgender inmates will soon get a separate enclosure/ward in prisons to ensure their right to privacy and dignity.

Advisory given by MHA

- While providing **exclusive space** for transmen and transwomen in correctional

facilities, prison officials will ensure that they **are not completely isolated** from others.

- If the court **warrant does not mention the self-identified gender or if the gender is disputed by the person**, the Jail Superintendent should, with the help of the legal services authorities, assist the person

in **making an application** for a change in gender identity.

- **Self-identity of transgender persons** is respected at all times in prison - during jail admission process, medical examination, search, lodging, clothing and treatment or care inside prisons.
- States to ensure that **transgender inmates** should be searched by person of **their preferred gender or by a trained medical professional**.
- The search procedure **should be confined to compliance with security protocols and restriction of contraband** and should not be aimed at determining the gender of the person.
- There should be **adequate preservation of right to privacy and dignity** in regard to separate toilets for transmen and transwomen as well as shower facilities.
- Transgender inmates should have **equal right to healthcare**, without any discrimination on grounds of their gender identity.
- **Ensure specific health needs of transgender persons** with regard to their **mental health and gender affirmative processes**, over and above the scope of rehabilitation, aftercare, welfare of prisoners.
- It also called for **training of prison medical officers** in the standards of care for transgender persons and their right to **decide their self-identified gender**.

Supreme Court Judgements

National Legal Services Authority (NALSA) vs. Union of India (2014):

- upheld the right of all persons to **self-identify their gender**.
- declared that **hijras and eunuchs** can legally identify as **“third gender”**.

- held that transgender persons were entitled to fundamental rights under **Articles 14, 15, 16, 19(1)(a) and 21 of the Constitution**.
- referred to core international human rights treaties and the **Yogyakarta Principles** to recognise transgender persons' human rights.
 - **Yogyakarta Principles** is a document about human rights in the **areas of sexual orientation and gender identity**.
 - It was published as the outcome of an international meeting of human rights groups in Yogyakarta, Indonesia, in November 2006.

Navtej Singh Johar vs Union of India (2018)

- The SC struck down the sec 377 on **homosexuality** that made carnal intercourse against order of nature a criminal offence.
- The court **overruled its previous judgement** given in **Suresh Kaushal case** and declared Sec 377 as unconstitutional as it violated Art 14,15,19 and 21 of the Constitution.

Challenges for Transgender persons in prison

Intrusive bodily searches

- As per the Prison act, 1894 the bodily searches are mandatory and rules are laid down in the model prison manual (MPM).
- **MPM** does not say anything about **sexual minorities**.
- This could become a **weapon of exploitation** because the physical search will be **based on their apparent sex characteristics**.

No separate cells for trans people

- Prisoners are required to be separated by **Section 27 of the Prisons Act as well as the MPM**.
- MPM categorizes **women, adolescents and high-security prisoners** as in need of special treatment to protect them from any kind of abuse.
- However, **no mention of trans prisoners is made**.
- Keeping trans prisoners with the **general population of prisoners** exposes them to **targeted sexual abuse** by their fellow inmates.

Inadequate medical facilities

- Act states that their health must be examined on the **general or specific orders of the medical officers**. But the Act **fails to account** for trans prisoners.

Lack of records on transgender prisoners

- Current law does not prescribe for maintaining separate records for transgender person.

Road Ahead:

- Trans person should be **recruited as a member of "jail authorities"**.
- Jails should have an **oversight facility** that is dedicated to **ensuring the safety and security of sexual minorities** and their preventive monitoring.
- Implement the guidelines issued in NALSA judgement.
- The Prisons Act and the MPM need to recognise the right to self-determination.

RAILTEL TO CREATE 'EDGE DATA CENTRES' FOR EFFICIENT DIGITAL DELIVERY IN RURAL, SEMI-URBAN AREAS

RailTel has decided to create several "edge data centres" in rural and semi-urban areas, to bridge the digital divide in the country and also accelerate the pace of digital transformation.

- These are **small data centres** located at the edge of the network, where they are **closer to end users and devices**.

- It enables the organizations to provide their customers with the benefit of **faster delivery, lower latency, higher security, and greater control over their data**.

INVESTOR EDUCATION AND PROTECTION FUND AUTHORITY (IEPFA) SIGNS MOU WITH INDIRA GANDHI NATIONAL OPEN UNIVERSITY (IGNOU) FOR PROMOTING INVESTOR EDUCATION AND FINANCIAL LITERACY AMONG YOUTH THROUGH GYAN DARSHAN CHANNEL

Recently, the Investor Education and Protection Fund Authority (IEPFA) has signed a Memorandum of

Understanding (MoU) with Indira Gandhi National Open University (IGNOU) for Investor Education.

Investor Education and Protection Fund Authority (IEPFA):

- Established in 2016, IEPFA is under the aegis of the **Ministry of Corporate Affairs**.
- It works for **investor awareness and promotion of the interest of investors**.

- It is also responsible for the administration of the **Investor Education Protection Fund (IEPF)**.

- IEPF is established under the Companies Act, 1956 by way of the Companies (Amendment) Act, 1999.

MeitY INVITES APPLICATIONS FOR ITS CHIPS TO STARTUP PROGRAMME

Ministry of Electronics and Information (MeitY) has sought applications from 100 academia, R&D organisations, start-ups and MSMEs under its Chips to Startup (C2S) Programme.

IP Core repository over a **period of 5 years**.

Chips to Startup (C2S) Programme

- **Aim:** To train 85,000 number of **high-quality** and **qualified engineers** in the area of **Very large-scale integration (VLSI)** and **Embedded System Design**.
- The programme would be **implemented at about 100 academic institutions/R&D organisations** across the Country.
- **C-DAC (Centre for Development of Advanced Computing)**, a scientific society operating under MeitY, will serve as the **nodal agency for the programme**.
- With the help of this training, the government intends to usher the development of 175 ASICs (Application Specific Integrated Circuits), Working Prototypes of 20 System on Chips (SoC) and

PM MODI DECLARES JANUARY 16 AS NATIONAL STARTUP DAY

Recently, the Prime Minister announced that January 16 would now be celebrated as National Start up Day in order to spread the culture of startups in the country.

Startup India

Government Schemes For promotion of Startups in India:

- It is a flagship initiative of Government of India.
- **Launched in:** 16th January 2016.

- **Aim:** Building a strong ecosystem for nurturing innovation and startups in the country.

Startup India Seed Fund Scheme (SISFS)

- **It will support 3,600 entrepreneurs** through 300 incubators in the next 4 years.
- Rs. 945 crores have been sanctioned under the SISFS Scheme from 2021-22.
- **Aim:** To provide financial assistance to startups for proof of concept, prototype development, product trials, market entry and commercialization.

Fund of Funds for Startups (FFS) Scheme

- **Aim:** To meet the **funding needs of startups**.
- **Monitoring agency:** Department for Promotion of Industry and Internal Trade (DPIIT)
- **Operating agency:** Small Industries Development Bank of India (SIDBI)

Ease of Procurement

- To enable **ease of procurement**, Central Ministries/ Departments are directed to relax conditions of prior turnover in public procurement for all Startups subject to meeting quality and technical specifications.
- Further, **Government e-Marketplace (GeM) Startup Runway**; a dedicated corner for startups to sell products & services directly to the Government.

Self-Certification under Labour and Environmental Laws

- Startups are allowed to self-certify their compliance under **6 Labour** and **3 Environment laws** for a period of 3 to 5 years from the date of incorporation.

Income Tax Exemption for 3 years

- Startups incorporated on or after 1st April 2016 can apply for **income tax exemption**.
- The recognised startups that are granted an **Inter-Ministerial Board Certificate** are exempted from income-tax for a period of 3 years out of 10 years since incorporation.

Exemption for the Purpose of Clause (VII)(b) of Sub-section (2) of Section 56 of the Act

- A DPIIT recognized startup is eligible for exemption from the provisions of section 56(2) (vii-b) of the **Income Tax Act**.

Faster Exit for Startups

- **Ministry of Corporate Affairs** has notified Startups as '**fast track firms**' enabling them to wind up operations within 90 days vis-a-vis 180 days for other companies.

Startup India Hub

- **Launched in:** 19th June 2017
- It is an online platform for all **stakeholders in India** to discover, connect and engage with each other.

International Access to Indian Startups

- It will connect **Indian startup to global startup ecosystems** through various engagement models.
- It will be done through international Government to Government partnerships, participation in international forums and hosting of global events.

National Startup Awards

- **Aim:** To recognize and reward outstanding startups and ecosystem enablers that are building innovative products or solutions with high potential of employment generation or wealth creation, demonstrating measurable social impact.

Support for Intellectual Property Protection

- Startups are eligible for fast-tracked **patent application examination and disposal**.
- The Government of India launched **Start-ups Intellectual Property Protection (SIPP)**.

- It facilitates the startups to file applications for patents, designs and trademarks through registered facilitators in appropriate IP offices by paying only the statutory fees.

Key fact

- India is the **third-largest base for unicorns in the world** after the US which has close to 487 unicorns, and China which is home to 301 unicorn startups.
- In 2021, India granted 28,000 patents compared to 4,000 in 2013-14, while 2.5 lakh trademarks were registered in 2020-21 compared to 70,000 in 2013-14.

30-DAY NOTICE PERIOD NOT MANDATORY UNDER SPECIAL MARRIAGE ACT: ALLAHABAD HIGH COURT

Recently, Allahabad High Court ruled that couples seeking to solemnise their marriage under the Section 5 of Special Marriage Act, 1954 can **choose not to publish the mandatory 30-day notice of their intention to marry**.

Special marriage act, 1954

- The Special Marriage Act, 1954 has provision for **civil marriage (or "registered marriage") for people of India and all Indian nationals in foreign countries, irrespective of the religion or faith followed by either party**.
- Hindus, Muslims, Buddhists, Jains, Sikhs, Christians, Parsis, or Jews can also perform marriage under the Special Marriage Act, 1954.
- The Act originated from a piece of legislation **proposed during the late 19th century**.
- **Henry Sumner Maine** first introduced Act III of 1872, which would permit any

dissenters to marry whomever they chose under a new civil marriage law.

- Marriages solemnized under **Special Marriage Act are not governed by personal laws**.
- The Special Marriage Act, 1954 **replaced the old Act III, 1872**. New act had major 3 objectives to provide:
 - A special form of marriage in certain cases.
 - For registration of certain marriages.
 - For divorce.

Conditions for marriage

- Each party involved should have **no other subsisting valid marriage**. It means, the resulting marriage should be monogamous for both parties.
- The groom must be **at least 18 years old**; the bride **must be at least 18 years old**.
- The parties should be competent in regard to **their mental capacity** to the extent that they are able to give **valid consent for the marriage**.

- The parties should not fall within the **degree of prohibited relationship**.

Succession to the property

- Succession to the property of persons **married under this act** or **any marriage registered** under this act and that their **children will be governed** under the **Indian Succession Act**.
- If the parties to the marriage belong to **Hindu, Buddhist, Sikh, or Jain religions**, then the **Hindu Succession Act** will govern the succession to their property.
 - A marriage can be registered in India either under the **Hindu Marriage Act, 1955** or under the **Special Marriage Act, 1954**.

The Hindu Marriage Act, 1955

- The Hindu Marriage Act only **applies to the Hindus**, whereas the Special Marriage Act extends to **all Indian citizens**.
- The Hindu Marriage Act allows for an **already solemnized marriage** to be registered.
- It **does not provide for Registrar** for solemnization of a marriage.
- Parties to the marriage **must apply to the Registrar** in whose jurisdiction the marriage is solemnized or to the Registrar in whose jurisdiction either party to the marriage has resided **for at least six months immediately before the date of marriage**.
- Both parties must appear with **their parents or guardians or other witnesses** before the Registrar **within one month from the date of marriage**.
- There is a provision for the Registrar, and subsequently, the **District Registrar** concerned to condone delay for **up to five years**.

MINISTRY OF TEXTILES CLEARS 20 STRATEGIC PROJECTS WORTH RS 30 CRORE

Recently, Ministry of Textiles cleared 20 strategic research projects in the areas of Specialty fibers and Geotextiles

National Technical Textiles Mission (NTTM):

- NTTM was approved by Cabinet Committee on Economic Affairs.
- **Launched in:** 2020
- **Aim:** To make India a leader of technical textiles around the world.
- **Implementation period:** 2020-21 to 2023-24
- An amount of Rs 1480 crore has been finalized by the Government for this mission.

Objectives:

- To get India at the highest position in **Technical Textiles** globally.
- To improve the penetration level of the technical textiles in India.
- The Mission is focused on the **usage of textiles** in different flagship missions, various programmes of the country.

Components of NTTM:

Research, Innovation and Development

- It comprises an amount of Rs. 100 crores.

- It has **fundamental research** at the fiber level which will aim at path-breaking products.
- It has application-based research in **Agro-textiles, geotextiles**, etc.

Promotion and Market Development

- A **growth rate** of around 15-20% per annum has targeted to take the level of the **domestic market**.
- The level of the market has raised to 40-50 billion USD.

Export Promotion

- The **current value of the export** is around Rs 14000 crore per annum.
- The mission focuses to increase the export value by Rs 20000 crore by the year 2021-22.

Education, Training and Skill Development

- In order to meet the fast-growing technical textiles and challenges, **education has promoted**.
- **Highly skilled labour** has created to meet the requirements of this mission.

Benefits of NTTM:

- The **usage of textiles in dairy, Swachh Bharat Mission**, agriculture, etc., will improve the costs of the economy.
- It will enhance soil and **water conservation**.
- This mission will improve **agricultural productivity**.
 - Due to increased agricultural productivity, farmers' income for every acre of land will increase.
- It promotes manufacturing and **export activities** in the country.
 - The mission plans to promote start-ups and ventures.

Technical Textiles:

- These are **textiles materials** and products manufactured for technical performance and functional properties rather than aesthetic characteristics.
- The products are divided into 12 broad categories: Agrotech, Buildtech, Clothtech, Geotech, Hometech, Indutech, Mobiltech, Meditech, Protech, Sportstech, Oekotech, Packtech.
- India shares nearly 6% of world market size of 250 billion USD.
 - However, the **annual average growth** of the segment is 12%, as compared to 4% world average growth.
- **Penetration level of technical textiles** is low in India at 5-10%, against 30-70% in advanced countries.

NO STATE HAS REPORTED STARVATION DEATHS, CENTRE TELLS SC

The supreme court asked the States to file reports on the status of malnutrition and hunger deaths in two weeks along with suggestions for community kitchen schemes.

- SC asked the Union government to **prepare a model to implement the Community Kitchen scheme across** the country and for providing additional food grains to states to run it.

- A Community Kitchen is a group of people who meet on a **regular basis to plan, cook and share healthy, affordable meals.**

Steps taken by government to fight against hunger

National Nutrition Mission

- **National Nutrition Mission (NNM) or the POSHAN Abhiyaan,** was launched on International Women's Day 2018.
- It targets **children, pregnant women and lactating mothers,** aiming to **reduce stunting, undernutrition, anemia and low birth weight babies.**
- **Stunting:** It is defined as **low height-for-age.** It is the result of chronic or recurrent undernutrition. **In 2019-21, 35.5% of children** below five years were stunted.
- **Undernutrition:** It is a deficiency of calories or of **one or more essential nutrients.**
- **Anemia:** It is a condition in which person **lack enough healthy red blood cells** to carry **adequate oxygen to body's tissues.** Females (54.6%) were more anaemic than males (45.1%).
- **low birth weight:** It is used to describe babies who are born **weighing less than 5 pounds, 8 ounces (2,500 grams).**
- It uses **Lives Saved Tool,** also known as LiST, to gather results on increased interventions of maternal, newborn and child health, and nutrition.
- NNM targets to reduce **stunting, under-nutrition, anemia (among young children, women and adolescent girls) and reduce low birth weight** by 2%, 2%, 3% and 2% per annum respectively.

National Food Security Mission

- **National Development Council** launched the National Food Security Mission in 2007.

- **Aim:** To increase the production of rice, wheat and pulses through:
 - **Area expansion and productivity enhancement.**
 - **Restoring soil fertility** and productivity
 - **Creating employment opportunities**
 - **Enhancing farm level economy.**

Zero Hunger Programme

- Programme in India began in 2017 to **improve agriculture, health and nutrition.**
- Programme Focused on **Developing farm equipment, revamping the farming system, setting up genetic gardens for biofortified plants** and beginning zero hunger training.
 - **Aim:**
 - **Decrease child stunting for children 2 years and younger**
 - **Ensure access to food all year round**
 - **Create stable food systems**
 - **Increase small farmer productivity and income**
 - **Eliminate food waste**

Eat Right India Movement

- It is started by **The Food Safety and Standards Authority of India.**
- The program stands on the foundation of regulatory **capacity building, collaborative and empowerment approach.**
- **Aim:** to encourage **communities to eat healthy, safe and sustainably.**

Food Fortification

- Food fortification is a process of **nutrient supplementation** **chemically, biologically or physically.**

- In India, food **fortification began in the 1950s with vegetable oil fortification** and salt iodization.
- In the 2000s, the government introduced **fortification of other commodities** such as rice and wheat.

Initiatives during Covid-19

Pradhan Mantri Garib Kalyan Anna Yojna

- Under these, five kilograms of food **grains were provided per person per month** to around 800 million beneficiaries.
- In addition to food grains, **one kg of pulses has been provided** to 194 million households per month for the period April to November 2020.

Atma Nirbhar Bharat Scheme

- The government provided about 800 thousand tonnes of additional food grains to **migrants / stranded migrants**.

- Each person received **five kg grain per month during May and June 2020**.

Global Hunger Index (GHI)

- India ranks **101st out of the 116 countries in 2021**.
- Prepared **annually by Concern Worldwide and Welthungerhilfe**.

GHI report

- India is among the **47 countries most likely to not reach the zero-hunger goal**.
- GHI score decreased to **27.5 in 2021 from 38.8 points in 2000**.
- However, India has the **highest child wasting in the world** that affects 17.3 per cent of its children.
- The proportion of undernourished in the population and the under-five child mortality rate are now at **relatively low levels**.

MUSTARD: THE YELLOW REVOLUTION IS HERE, FINALLY

A new yellow revolution has taken off, as farmers expand the area under the mustard crop.

Yellow Revolution:

- The revolution **launched in 1986- 1987**.
- Aim: To **increase the production of edible oil**, especially mustard and sesame seeds to achieve self-reliance.
- Yellow Revolution targets **nine oilseeds** that are **groundnut, mustard, soybean, safflower, sesame, sunflower, niger, linseed and castor**.
- India came up with the **Oil Technological Mission in 1986** to ensure success for yellow revolution.

Features of the Yellow Revolution

- Farmers were given **facilities like fertilizers and pesticides** for the crops, as well as irrigation etc.
- Other facilities included the **transportation facility and storage**. This was required to make the revolution successful.
- Boards such as the **National Dairy Board (NDB)** were given many important responsibilities to enhance the production of oilseed.
- The NDB took the responsibility to increase the production of groundnut oil in Gujarat.
- **National Oilseeds and Vegetable Oils Development Board** was setup to enhance

the production of oilseeds in other areas as well.

- **Oilseeds Production Trust** came in India to boost the production of the four oilseeds, mainly, mustard, groundnut, soybean, and sunflower.

Impact of Yellow Revolution:

- The Yellow revolution had the **implantation of hybrid mustard** and sesame seeds which significantly increased the production of edible oil.
- There was use of **improved technology for oil production.**
- The Revolution gave rise to a new era with **blooming sunflowers in the state of Punjab.**

Mustard:

- The mustard plant is an **important oilseed crop** of India.
- Mustard seed is **used as a spice.**
- Mustard seeds are a **rich source of oil and protein.**

- Mature mustard plants grow into **shrubs.**

Cultivation:

- Mustard seeds generally take **eight to ten days to germinate** if placed under the proper conditions.
- Yellow mustard has a **plant maturity of 85 to 90 days.**

Climatic Conditions:

- Mustard grows well in **temperate regions.**
 - It requires temperatures between **10°C to 25°C.**
- The mustard crop is produced in the areas receiving **625 -1000 mm annual rainfall.**
- Mustard farm does not tolerate freeze, so it requires a clear sky with frost-free conditions.

Soil Requirements:

- Mustard plantations relatively **require moist soil.**
- It can be raised in wide varieties of soils that range from **light to heavy loamy soils.**

SCM, MoHUA LAUNCHES 'OPEN DATA WEEK'

Ministry of Housing and Urban Affairs (MoHUA) announced the initiation of the Open Data Week to encourage adoption of open data and promote innovation across India's urban ecosystem.

Open data

- Open Data is the idea that data should be **freely available to everyone** to use and republish as they wish, **without restrictions from copyright, patents or other mechanisms of control.**

- The **goals of the open-source data** movement are **similar** to those of other "**open(-source)**" movements such as open-source software, hardware, open content, open specifications, open education etc.
- Term "**open data**" itself is **recent**, gaining popularity with the **rise of the Internet and World Wide Web** and, especially, with the **launch of open-data government initiatives** such as Data.gov, Data.gov.uk and Data.gov.in.

- One of the **most important forms of open data is open government data (OGD)**, which is a form of open data created by ruling government institutions.

Characteristics of Open data

- **Availability and Access:** The data must be **available as a whole** and at **no more than a reasonable reproduction cost**, preferably by downloading over the internet.
- **Re-use and Redistribution:** The data must be provided under terms that **permit re-use and redistribution** including the intermixing with other datasets.
- **Universal Participation:** Everyone must be able to use, re-use and redistribute - there should be **no discrimination against fields of endeavour or against persons or groups**.

Advantages of open data in urban planning

- **Urban resilience:** Open data system can help to build **resilience infrastructure** in cities by **mapping crowded and hazard zones** in the city.
- **Increases transparency and accountability:** It will increase transparency about **government spending**

on urban planning. Residents have the ability to see **exactly what their government has achieved, and how much more needs to be done.**

- **Access to information:** Information such as Real-time bus timetables, information on social housing, care initiatives, playgroups and public contracts can be easily accessible to citizens.
- **Economic growth:** Open data isn't just helping citizens, organizations and businesses in smart cities – it is also helping to **drive tourism and its associated economy.**

Non-open data

It refers to:

- Making data **available for a charge.**
- Compilation in databases or websites to which **only registered members or customers** can have access.
- Use of a **proprietary or closed technology or encryption** which creates a barrier for access.
- Copyright statements claiming to **forbid (or obfuscating) re-use of the data**, including the use of "no derivatives" requirements.
- **Patent forbidding** re-use of the data.

CABINET APPROVES EXTENSION OF TENURE OF THE NATIONAL COMMISSION FOR SAFAI KARAMCHARIS FOR THREE YEARS

Recently, the union cabinet approved the extension of the tenure of the National Commission for Safai Karamcharis (NCSK) for three years beyond 31.3.2022.

Extension

- The tenure of the present NCSK is ending in March 2022.

- The major beneficiaries of this extension would be the **Safai Karamcharis and identified manual scavengers.**
- As per a survey conducted in accordance with the **Manual Scavengers Act, 2013** a total of 58,098 Manual Scavengers was identified on 31.12.2021.

Who is Manual Scavenger?

According to the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013:

- A person engaged or employed by an individual or a local authority or an agency or a contractor for manually cleaning, carrying, disposing off, or otherwise handling in any manner human excreta in an insanitary latrine or in an open drain or pit into which human excreta from the insanitary latrine is disposed of or on a railway track or in such other spaces or premises as the Central Government or State Government may notify before the excreta fully decomposes in such manner as may be prescribed and the expression 'Manual Scavenging' shall be construed accordingly.

Genesis:

- The **National Commission for Safai Karamcharis (NCSK) Act, 1993** established a body called **National Commission for Safai Karamcharis (NCSK)**, for the next 4 years.
- But, the validity of the NCSK Act was extended twice in 1997 and 2002 respectively.
- The NCSK Act ended in 2004, thereafter the tenure of the NCSK has been extended as a **non-statutory body, under the Ministry of Social Justice and Empowerment** from time to time through resolutions.

National Commission for Safai Karamcharis (NCSK):

- It is a **non-statutory body under the Ministry of Social Justice and Empowerment.**
- It does not enjoy the powers of civil court.
- **Composition:**
 - **A Chairman** (in the rank and status of the union minister for States)
 - **Four members, including a lady member** (in the rank and status of the Secretary to the Government of India)
 - **A Secretary** (in the rank of Joint Secretary to the Government of India)
 - Other supporting staff.

Functions:

- **Consultation, Reporting, and Recommending the Central and State Governments** on any matter concerning Safai Karamcharis or welfare schemes related to the Safai Karamcharis.
- **Monitoring proper implementation of the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013.**
- Take steps for:
 - **mitigating the hardships** of Safai Karamcharis
 - **socio-economic upliftment** of the Safai Karamcharis.

Key Fact:

- **Safai Karamchari Andolan & Others Vs. Union of India (2014):** When a person engaged in cleaning of sewer/septic tank dies while cleaning the same, his family/ kin are entitled to Rs. 10 lakh compensation.

RADPFI GUIDELINES WILL HELP IN IMPROVING THE QUALITY OF LIFE IN RURAL AREAS

Recently, the Ministry of Panchayati Raj launched the RADPFI guidelines.

Objectives of Guidelines:

- To serve as the **basis for rural transformation** and enable effective Land use planning in rural areas.
- To ensure **ease of living in villages** by providing all necessary infrastructure and facilities.

The guideline (2021) focuses on:

- **Typology of villages** to prepare the spatial development plan (population, agro-climatic zones, Hill areas, disaster occurrence, urban-peri-urban areas and villages)
- Dealing with different development Land Use standards for different areas, with varied characteristics.
 - To facilitate the **planned spatial development** of rural areas.
- **Village Town Planning Scheme (VPS)** – through community based on Collaborative Planning.

- Planning for environmental benefit and disaster preparedness.
- **Improving the E-Governance** through Spatial Data Infrastructure (SDI).
- Most importantly using the **SVAMITVA** (and other digital tools) for Abadi area (linking to land records).

SVAMITVA Scheme:

- **Survey of Villages and Mapping with Improved Technology in Village Areas** (SVAMITVA) is an initiative of the **Ministry of Panchayati Raj**.
- It is a **Central Sector Scheme**.
- **Aim:** To provide rural people with the right to document their residential properties so that they can use their property for economic purposes.

Objectives:

- Creation of **accurate land records** for rural planning
- Determination of **property tax**
- To **reduce** property related **disputes and legal cases**

PACKAGES OF DRUG INGREDIENTS TO CARRY QR CODES FOR TRACKING: GOVT

Recently, the Union government has made QR (quick response) codes mandatory on packages of drug manufacturing ingredients, both domestic and imported.

- **Reason:** to **curtail the menace of counterfeit and substandard drugs** in the country.

Highlights about the new rule:

- Every Active Pharmaceutical Ingredient (API) manufactured or imported in India shall have QR code on its label at each level packaging.
 - **Active Pharmaceutical Ingredients or APIs** are the main raw materials for making intermediates, tablets, capsules, and syrups.

How does the QR Code helps in curtailing substandard drugs?

The QR Code:

- Facilitates **tracking and tracing**, during the entire supply chain.
- Ensures **authenticity** by distinguishing between genuine and counterfeit drugs.
- Help in **ensuring fair pricing** and curtailing counterfeit and smuggled drug items that may endanger people's health.
- Give **details about medicines, shipping details, batch, licence number & import licence**.
- Keep the customer updated about any price change in drugs.

What is a QR Code?

- QR stands for "**Quick Response**", which refers to **instant access to the information hidden in the Code**.

- QR Code is a two-dimensional version of the barcode, typically made up of black and white pixel patterns.
- QR code has **large storage capacity** and **ability to translate** information to consumers.

Benefits of using QR Codes:

- It gathers feedback to improve products or services.
- It helps in commercial tracking of the products.
- It helps in product marketing by increasing customer engagement with images or videos.
- It promotes business via events and coupons.
- It delivers information stored in tickets, payments, business cards.

SPICES BOARD LAUNCHES FIRST ONLINE PLATFORM FOR EXPORTS

Recently, Spice Xchange India was launched in Kochi.

- It is **India's first virtual platform for spice exports**.

- It is a **3D platform** which serve as a **virtual trade route** for Indian spice exporters to reach out to global customers.
- The portal uses **AI-based technology** to connect relevant **spice buyers** with Indian spice **exporters**.

PETITION ON CONJUGAL RIGHTS

Recently, it was noted that a petition regarding conjugal rights is pending in the supreme court for many months without a hearing.

Conjugal rights:

- Conjugal rights are the **social rights of either spouse, emerged due to a marriage**.

- It is an **inherent right** of the husband or wife to one another's society is **in the institution of marriage**.
- It includes the right to the other's **consortium (company), cohabitation (sexual intercourse), and maintenance (including property related matters)** etc.

- **Denial** of conjugal rights **leads to the restitution** of conjugal rights, by enforcement.
- In India, due to **non-availability of Universal Civil Code (UCC)**, all the

marriage and divorces related affairs are regulated according to the personal laws.

- And as a result, the **conjugal rights are also regulated accordingly under concerned personal laws.**

SUPREME COURT'S VERDICT ON INHERITANCE OF DAUGHTERS

The Supreme Court has ruled that the property of a man who has died without executing a will and is survived only by a daughter will devolve upon the daughter and not others such as his brother.

- The case involved a dispute over the property of a person who died in 1949 leaving behind a daughter who also died issueless in 1967.

Supreme court verdict

It stated that

- **Smritis, the Commentaries** written by various renowned learned persons and even judicial pronouncements have recognised the rights of several female heirs, the wives and the daughter's being the foremost of them.
- If a property of a **male Hindu dying intestate** is a self-acquired property or obtained in partition of a co-parcenary or a family property, the same would **devolve by inheritance and not by survivorship**, and a **daughter of such a male Hindu would be entitled to inherit** such property in preference to other collaterals.

Hindu Succession Act, 1956

- It is an Act relating to the **succession and inheritance of property.**
- This Act also deals with **intestate or unwilled (testamentary) succession.**

- This Act **combines all** the aspects of Hindu succession and brings them into its ambit.

Applicability

- Any person **who is Hindu by religion or any of its forms or developments**, including a Virashaiva, Lingayat, or a Brahmo, Prarthna or Arya Samaj follower.
- Any person who is a **Buddhist, Sikh or Jain by religion.**
- Any other person **who is not a Muslim, Christian, Parsi, Jew**, unless it is proved that such person would not be governed by Hindu law or custom.
- This Act shall also extend to **the whole of India.**
- However, this Section **shall not apply to any Scheduled Tribes** covered under the meaning of Article 366 of the Constitution, unless **otherwise directed by the Central Government** by a notification in the Official Gazette.

Which properties does this Act not apply to?

- Any property **whose succession comes under the regulation of the Indian Succession Act, 1925** by reasons of the provision under Section 21 of the Special Marriage Act, 1954.
- **Section 21 of the Special Marriage Act states that succession to the property of any person whose marriage is solemnized under this Act and**

the **property of the issue** of such marriage shall be **governed by the Special Marriage Act**.

- Any estate or property which goes to the **single heir through the terms of any agreement or covenant formed between the Ruler of an Indian State and the Government or through any enactment formed and passed before the commencement of this Act**.

Types of succession

Testamentary Succession

- When the succession of the property is **governed by a testament or a will**, then it is referred to as testamentary succession.
- Under Hindu law, a Hindu male or female can make the will for the property, including that of a share in the undivided **Mitakshara coparcenary property**, in favour of anyone.
 - In Mitakshara law, on the death of a coparcener, **his interest became merged with that of the surviving coparceners**.
 - **Sons inherited property only by virtue** of being or becoming coparceners.
- The distribution will be under the **provisions of the will and not through the laws of inheritance**.

Intestate Succession

- Someone **who dies leaving behind no will or testament**.
- When such a situation happens, then this property will be **distributed among the legal heirs** by the laws of inheritance.

Rules for ownership in the case of females

- Women are granted ownership of property, **whether it was acquired before or after the commencement of the Act**, thus abolishing their 'limited owner' status.

Hindu Succession (Amendment) Act, 2005

- It is an amendment to the **Hindu Succession Act, 1956**.
- It was essentially meant for **removing gender discriminatory provisions** regarding property rights in the Hindu Succession Act, 1956.
- This act is of coparcener, which means that "By **birth becomes a coparcener** in her own right in the same manner as the son to the daughter or women".
- It provided that daughters would be entitled to **an equal share in the property as the son**.

THE NEED FOR SHARED PARENTING

Despite the idea of joint parenting growing in India, the laws remain unchanged.

The laws governing child custody:

The Hindu Minority and Guardianship Act (HMGA) 1956:

- The **natural guardian** of a Hindu minor boy or unmarried girl shall be the **father and mother**.
- Custody of a minor, **below five years** of age, shall ordinarily be with the **mother**.
- The HMGA **does not** contain any independent, legal or procedural mechanism for deciding custody rights or declaring court-appointed guardians.

Guardian and Wards Act (GWA), 1890:

- The law is **colonial in nature**.
- This deals with the **appointment of a person as a 'guardian' to a child**, both with respect to the child and property.
- Child custody, guardianship and visitation issues between parents are determined under the GWA, if a natural parent wants to be declared as an exclusive guardian to his/her own child.

Best interests of the child:

- **India is a signatory** to the United Nations Convention on the Rights of the Child (UNCRC).
- The definition of "best interests of the child" has been incorporated from the UNCRC in the **Juvenile Justice (Care and Protection of Children) Act, 2015**.
- It means "the basis for any decision taken regarding the child, to ensure fulfilment of his basic **rights and needs, identity, social well-being and physical, emotional and intellectual development**".

Previous Recommendations for joint parenting:

The Law Commission of India Report 2015, on Reforms in Guardianship and Custody Laws in India:

- It **recommended joint custody** and shared parenting.
- It **disagreed** with the idea of **singular child custody** with one parent.

Justice Bindal Committee, 2018:

- The committee said that "**best interests of the child**" are of paramount importance in matters relating to child custody in view of the UNCRC.
- It recommended a complete draft of **The Protection of Children** (Inter-Country Removal and Retention) Bill, defining wrongful removal and retention, with a complete mechanism for redress.

Way Forward:

- Family courts offer little aid in such cases. Therefore, general guidelines or practice **directions by the Supreme Court** are the **need of the hour**.
- **Family courts** are equipped under the **Family Courts Act of 1984** to **devise their own procedure**, independent of the technicalities of law.
 - They can **formulate out-of-box methods** and insist that children be shared by the father and mother.
- Shared or joint parenting with equal rights is a viable, practical, balanced solution for the child's optimal growth.

GOVERNMENT TO PROMOTE DRONE USE IN AGRICULTURE – FINANCIAL SUPPORT BEING EXTENDED UNDER 'SUB-MISSION ON AGRICULTURE MECHANIZATION'

The guidelines of "Sub-Mission on Agricultural Mechanization" (SMAM) have been amended.

Amended guideline

- It envisages **granting up to 100%** of the cost of **agriculture drone or Rs. 10 lakhs**, whichever is less, as grant for purchase of drones.
- These grants will be given to the **Farm Machinery Training & Testing**

Institutes, ICAR (Indian Council of Agricultural Research) institutes, **Krishi Vigyan Kendras** and **State Agriculture Universities** for taking up large scale demonstrations of this technology on the farmers' fields.

- The **Farmers Producers Organizations (FPOs)** would be eligible to **receive grant up to 75% of** the cost of agriculture drone for its demonstrations on the farmers' fields.
- A **contingency expenditure of Rs.6000 per hectare** would be provided to implementing agencies that **do not want to purchase drones but will hire drones**.
- The contingent expenditure to implementing agencies that **purchase drones for drone demonstrations** would be limited to Rs.3000 per hectare.

Sub mission on Agricultural Mechanization (SMAM)

- It was launched by **Ministry of Agriculture and Farmers Welfare**.

Objectives

- **Increasing** the reach of **farm mechanization** to small and marginal farmers and to the regions where availability of farm power is low.
- Promoting '**Custom Hiring Centres**' to offset the adverse economies of scale arising due to small landholding and high cost of individual ownership.
- **Creating hubs for hi-tech & high value farm equipment's**.

- **Creating awareness** among stakeholders through demonstration and capacity building activities.
- **Ensuring performance testing and certification** at designated testing centers located all over the country.

Mission Strategy

To achieve the above objectives, the Mission will adopt the following strategies:

- **Conduct performance testing for various farm machineries and equipments** at the four Farm Machinery Training and Testing Institutes (FMTTIs), designated State Agricultural Universities (SAUs) and ICAR institutions;
- **Promote farm mechanization** among stakeholders by way of on-field and off-field training and demonstrations.
- **Provide financial assistance** to farmers for procurement of farm machinery and implements
- **Establish custom hiring centres** of location and crop specific farm machinery and implements

Farm mechanization

- Mechanized agriculture is the **process of using agricultural machinery** to mechanize the work of agriculture, greatly increasing farm worker productivity.
- The **overall level of farm mechanization** in the country is only 40-45% and 90% of the total farm power is contributed by mechanical and electrical power sources.

TN TO TAKE UP EXCAVATION AT 7 ARCHAEOLOGICAL SITES: CM

Chief Minister of Tamil Nadu recently announced government's intent to take up the second phase at Gangaikondacholapuram.

Gangaikondacholapuram:

- It is a city built by the **King Rajendra Chola I** (1012-104) after his victorious expedition up to the Gangetic plains.
- It is located in **Tamil Nadu**.
- Gangaikondacholapuram had been the **capital of the Cholas** for about 250 years from about 1025 CE.
- The palace remains in the city are the only surviving examples of the **secular architecture** of the Cholas in Tamil Nadu.

Rajendra Chola:

- **Rajendra Chola** was known for his **exploits far and wide**.
- He is credited with having a **strong army** and an unmatched naval force.
- He built the **Gangaikondacholeeswarar Temple**, rivalling the Peruvudaiyar Kovil (Sri Brihadisvara/Big Temple) built by his father Rajaraja Chola at Thanjavur.

- He also built a huge **lake** to the west of the city, named **Cholagangam**.
- The lake is considered the Jalasthambam, signifying his victorious march up to the Ganges.
- Known as Ponneri now, it still remains one of the biggest in the region.

Things found during excavation:

- **Roofing tiles and iron nails** were recovered in large numbers.
- A Chola period **copper coin, glass beads and bangles**, hopscotch markers and spouted knobs were found.
- **Terracotta pieces and ceramics**, such as red ware, black ware, decorated ware and Chinese ware, including celadon ware, were found.

Significance of the findings:

The recovery of the Chinese ware indicated that **trade ties** had existed between the two countries then.



CHILE REWRITES ITS CONSTITUTION, CONFRONTING CLIMATE CHANGE HEAD-ON

Recently, the South American country of Chile decided to rewrite its constitution to tackle a climate and ecological emergency.

Need of new constitution?

- Chile prospered by **exploiting its natural riches of copper and coal**, salmon and avocados.
- Overexploitation and inequalities led the mineral-rich areas of Chile to known as **“sacrifice zones”** of environmental degradation.
- Over **social and environmental grievances**, a **new constitution** is being written amid a declared climate and ecological emergency.

Chile:

- Chile is a country in the **western part of South America**.
- It is the **southernmost country in the world**, the closest to Antarctica.

- It occupies a long, narrow strip of land between the Andes to the east and the Pacific Ocean to the west.

Features:

- Chile is **world’s second largest producer of lithium** and has **third largest lithium reserve**.
- The country is **rich in copper and coal**.
- It houses large number of **active volcanoes**.
- In northern Chile, lies the **driest desert in the world**, known as **Atacama Desert**.
- **Chile’s central valley**, also known as **Pampas**, lies between Andes and the Pacific Ocean.

India Chile Relations:

- India and Chile cooperate extensively in multilateral fora and **share similar views on climate change/renewable energy issues** and on expansion and reforms of the United Nations Security Council (UNSC).

- Chile articulated its support for India's claim to a permanent seat in the UNSC.

Trade:

- Copper is the major item, along with iodine, chemical wood pulp and walnuts in Chile's export basket to India.
- Indian export basket to Chile consists of cars, pharmaceuticals, home furnishings, garments, handicrafts and hand tools.
- In the Latin American region, Chile is the fifth largest trading partner of India.

Sacrifice Zones:

- A sacrifice zone is a geographic area that has been permanently impaired by environmental damage or economic disinvestment.
- They are places damaged through locally unwanted land use (LULU) causing chemical pollution where residents live immediately adjacent to heavily polluted industries or military bases.

- Typically, these areas are located in low-income neighbourhoods or are economically less important than other lands.
- Some of the most famous examples of sacrifice zones are Love Canal (New York), Three Mile Island (Pennsylvania), and the Gulf of Mexico.

Lithium:

- Lithium is a soft, silvery-white alkali metal.
- It does not occur as the metal in nature.
- It is found combined in small amounts in nearly all igneous rocks and in the waters of many mineral springs.
- Spodumene, petalite, lepidolite, and amblygonite are the more important minerals containing lithium.
- The world's top four lithium-producing countries from 2019, as reported by the US Geological Survey are Australia, Chile, China and Argentina.
- The intersection of Chile, Bolivia, and Argentina make up the region known as the Lithium Triangle.

19TH MEETING OF NATIONAL TIGER CONSERVATION AUTHORITY (NTCA)

The 19th Meeting of National Tiger Conservation Authority (NTCA) was held recently, under the chairmanship of Union Minister for Environment, Forest & Climate Change.

National Tiger Conservation Authority (NTCA)

- NTCA is a statutory body under the Ministry of Environment, Forests and Climate Change constituted under enabling provisions of the Wildlife (Protection) Act, 1972.

- **Aim:** Strengthening tiger conservation, as per powers and functions assigned to it under Wildlife (Protection) Act, 1972.

Objective:

- Providing statutory authority to Project Tiger so that compliance of its directives become legal.
- Fostering accountability of Centre-State in management of Tiger Reserves, by providing a basis for MoU with States within our federal structure.

- Providing for an oversight by Parliament.
- Addressing livelihood interests of local people in areas surrounding **Tiger Reserves**.

Power & Functions:

- **Evaluate and assess** various aspects of **sustainable ecology** and disallow any ecologically unsustainable land use such as, mining, industry and other projects within the tiger reserves.
- Lay down normative standards for tourism activities and guidelines for **project tiger** from time to time for **tiger conservation in the buffer and core area**.
- Provide for **management focus and measures** for addressing conflicts of men and wild animal.
- Provide information on protection measures including future conservation plan, estimation of population of tiger and its natural prey species, status of habitats and disease surveillance.
- Ensure critical support including scientific, information technology and legal support for better implementation of the tiger conservation plan.

Conservation Assured | Tiger Standards (CA|TS)

- CA|TS is a set of criteria which allows tiger sites to check if their management will lead to successful tiger conservation.

- It was officially launched in 2013.
- It is an important part of Tx2, the global goal to double wild tiger numbers by the year 2022.
- **Aim:** To ensure safe havens for tigers.
- It is organised under seven pillars and 17 elements of **critical management activity**.

Significance:

- CA|TS is a globally accepted **conservation tool** that sets best practices and standards to manage tigers and encourages assessments to **benchmark progress**.
- CA|TS accreditation is a global recognition of **good tiger governance**.
- It will strengthen management practices in the tiger reserve area as per **international common criteria**.

Tiger reserves accredited with CA|TS status are:

- Manas, Kaziranga and Orang in Assam;
- Satpura, Kanha and Panna in Madhya Pradesh;
- Pench in Maharashtra;
- Valmiki Tiger Reserve in Bihar;
- Dudhwa in Uttar Pradesh;
- Sunderbans in West Bengal;
- Parambikulam in Kerala;
- Bandipur Tiger Reserve in Karnataka;
- Mudumalai and Anamalai Tiger Reserves in Tamil Nadu

BRAZIL: DEFORESTATION JUMPS IN WORLD'S LARGEST SAVANNA AS SCIENTISTS RAISE ALARM

Recently, it has been reported that deforestation and other clearances of native vegetation in the Cerrado rose 8,531 square kilometres.

Facts about Cerrado:

- Cerrado, spread across the different states of Brazil, is the world's **most species-rich savanna**.
- It is often called an **upside-down forest** because of the deep roots its plants

sink into the ground to survive seasonal droughts and fires.

- The destruction of this biome is the main cause of **greenhouse emissions** in Brazil.

What is deforestation?

- Deforestation refers to the **purposeful clearing of forest** areas to use it as agricultural croplands, urbanization, or mining activities.

Causes of Deforestation

Natural Causes: Some natural causes of deforestation, includes:

- **Forest fires** destroys forests and biodiversity, and also releases CO₂ into the atmosphere.
- **Diseases** that affect trees.
- **Parasitic attack**
- **Extreme weather** such as hurricanes or floods

Manmade causes

- **Agriculture and Grazing**
- **Main cause of deforestation:** Conversion of forest land to cropland and pasture for growing crops or raising livestock
- **Commercial or industrial agriculture** (field crops and livestock) – accounts for 40% loss
- **Slash-and-burn agriculture**
- Mining on tropical forests
- Construction of **human infrastructures** (accounts for 10%)
- **Urbanization**

Consequences of deforestation

- **Loss of biodiversity:** Destruction of forests leads to destruction of the habitat of many

species, thus impacting the survival of global bio-diversity.

- **Soil degradation:** When the trees that bind the soil together are cut down, it results in soil erosion.
- **Global warming:** Trees absorb CO₂, thus helping in mitigate the greenhouse effect.

Savanna

- A savanna is a **rolling grassland** scattered with **shrubs** and isolated trees, which can be found between a tropical rainforest and desert biome.
- **Location:** They are mostly found in the **equatorial** regions, on the edges of tropical rainforests.
 - The largest Savanna is found in equatorial Africa.
- **Climate:** Savannas have **warm temperature**.
- They have extreme **wet seasons and dry seasons:**
 - a very long **dry season** (winter), with an average rainfall of 4 inches.
 - a very **wet season** (summer), with an average rain of 15 to 25 inches.
- **Flora:** Grasslands and dispersed trees forms the vegetation of savanna.
 - It has **wild grasses and shrubs**.
 - The trees include **Acacia, Baobab, Pine and Palm**.
- **Fauna:** Many of the savanna biome animals are **grazing herbivores** and **rodents**.
 - Example: elephants, giraffes, zebras, rhinoceroses, buffalo, lions, leopards, and cheetahs.
 - Due to its open environment, **camouflage and mimicry** are essential for animal survival in the savanna.
- **Soil:** Has **porous soil**, which means the water drains away very quickly.

- The first layer of soil is made of **humus**. Second is the **hardpan of laterite**.
- Third is of **red clays** and re-deposited silica. Fourth is **bedrock**, where plant roots cannot penetrate the hard 'pan' layer in or subsoil, restricting vegetation growth.
- **Threats: Controlled burns** by humans for land clearing, **Overgrazing** etc.

Types of Savannas

Tropical and subtropical savannas:

- They are found **near the equator** and bordered by tropical rainforests and deserts.
- The grasslands occupying the **area between the two tropics**, the Tropic of Cancer to the north and the Tropic of Capricorn to the south, is called tropical grasslands.
- The biome covers over **half of Africa, most of South America and portions of Asia** such as India.
- **Example:** Serengeti in Africa.
- Brazilian savanna (Cerrado) is included in this category, known for its exotic and varied flora.

Temperate savannas:

- Temperate savannas are **mid-latitude savannas** with wetter summers and drier winters.
- They cover much of the Great Plains of the United States.
- **Example:** Temperate savanna of Southeast Australia.

Mediterranean savannas:

- Mediterranean savannas are **mid-latitude savannas in Mediterranean climate** regions, with mild, rainy winters and hot, dry summers.
- **Example:** Alentejo region in Portugal.

Flooded savannas:

- Flooded savannas are savannas that are **flooded seasonally** or year-round.
- They are found mostly in the tropics and subtropics.
- **Example:** Pantanal in South America.

Montane savannas:

- Montane savannas are **mid- to high-altitude savannas**, located in a few spots around the world's high mountain regions.
- **Example:** The mountains of Angola in equatorial Africa.

SEASONAL FLUCTUATIONS IN DARTERS' MOVEMENTS BEING MONITORED

Recently, During the Conservation effort to monitor seasonal fluctuations in birds' movements, the ringing of oriental darters has been taken up in Bharatpur bird sanctuary.

Oriental Darter

- Oriental Darter is a water bird of tropical **South Asia and Southeast Asia**.

- It is also popular as a **Snakebird**.
- It is found mainly in **freshwater lakes and streams**.
- It hunts for fish while its body is submerged in water.
- **International Union for Conservation of Nature (IUCN) status:** Near Threatened.

Physical appearance:

- Breeding adults have a **shiny black body** with silvery-white streaks along with the wings.
- **Brownish crown** and long slender neck with a straight pointed bill.
- **White stripe** running from the eye to the side of the neck.

Geographical presence of Oriental Darter

- Oriental darter is mostly found in the fresh waters of **India, Pakistan, Sri Lanka, Bangladesh, Cambodia, Malaysia, and Myanmar.**

Keoladeo National Park (Bharatpur bird sanctuary)

- **Established in:** 1982.

- **Located near** the city of Bharatpur in Rajasthan near **Gambhir River and Banganga River.**
- Park was originated as a royal hunting reserve during the 1850s and was a game reserve for Maharajas and the British.
- It was declared a national park and then later listed as a **World Heritage Site by UNESCO in 1985.**
- **Flora:** Tropical dry deciduous forests intermixed with dry grasslands. Mostly found flora are Kadam, Jamun, and Babul.
- **Fauna:** Chital deer, **Rhesus macaque, Blackbuck,** and **Indian crested porcupine.**
 - Keoladeo National Park is known as a **“bird paradise”** since more than 370 bird species have been recorded in the park.
 - Mostly found birds are: Herons, Storks, and Cormorants.

IN A FIRST, THE ELUSIVE CLOUDED LEOPARD SIGHTED IN NAGALAND MOUNTAINS

A team of researchers have recorded photographic evidence of clouded leopards at an elevation of 3,700 metres in a community-owned forest along the Indo-Myanmar border in Nagaland.

Clouded leopard

- It is also called the **mainland clouded leopard**, is a wild cat.
- The tree-climbing clouded leopard (*Neofelis nebulosa*), a **medium-sized felid** (wild cat), is the **smallest** of the large wild cats.
- It is the **state animal** of the Indian state of **Meghalaya.**
- **Distribution and habitat:**
 - Occurs from the Himalayan foothills in **Nepal, Bhutan and India to Myanmar, southeastern Bangladesh, Thailand,**

Peninsular Malaysia, to south of the **Yangtze River in China.**

- It is regionally **extinct** in Singapore and Taiwan.
- **In India,** it occurs in Sikkim, northern West Bengal, Meghalaya subtropical forests, Tripura, Mizoram, Manipur, Assam, Nagaland and Arunachal Pradesh.
- Both males and females average **26 months at first reproduction.**

Physical features

- The clouded leopard's fur is of a **dark grey or ochreous ground-color**, often largely obliterated by black and dark dusky-grey blotched pattern.
- There are **black spots on the head, and the ears are black.**

- Females are **slightly smaller** than males.

Conservation status

- **IUCN status:** Vulnerable
- **CITES:** Appendix I
- **Wildlife (Protection) Act 1972:** Schedule I

COME UP WITH CONSERVATION PLAN FOR SARUS CRANE BIRDS: BOMBAY HC TELLS GOVT

Recently, High Court asked Maharashtra government to come up with a joint action plan with the Union government for the preservation and conservation of the Sarus crane.

Sarus Crane

- The Sarus crane is one of the largest cranes of the world and the **tallest flying bird** in the world.
- It is a **social creature**, found mostly in pairs or small groups of three or four.
- There are **two subspecies** of Sarus in the world:
 - Antigone antigone antigone found in the Indian subcontinent, including Myanmar.
 - Antigone antigone sharpii, found in southeast Asia and northern Australia.
- It is the official **state bird of Uttar Pradesh**.
- **Physical features:** Tall pale gray crane with pink legs and red bare skin on head extending down the neck.
- **Habitat:** Use **wetlands** for nesting, but also nest in **uncultivated patches** amid flooded rice paddies.
- **Indian Sarus Crane** is found in the plains of north western India, the western half of Nepal's Terai Lowlands and parts of Pakistan.

- **The Eastern Sarus Crane** is found in Myanmar, Laos, Vietnam and Cambodia. The Australian Sarus Crane occurs in northern Australia.
- **Breeding:** They known to **mate for life with a single partner**, its breeding season coincides with heavy rainfall in monsoon.
- **Behaviour:** Sarus cranes are largely **nonmigratory**, but some populations migrate to short distances.
- **Diet:** Aquatic plants, invertebrates, grains, small vertebrates and insects.
- **Mortality:** Eggs are often destroyed at the nest by jungle (*Corvus macrorhynchos*) and house crows.
- In captivity, sarus cranes have been known to live for as long as **42 years**.
- **Threat:** Water diversions and unsustainable conversion of wetlands, **habitat loss**, poisoning, human disturbance, collisions with power lines, invasive species and changes in agricultural practices.
- **Conservation status:**
 - IUCN Red List- **Vulnerable**
 - CITES: **Appendix II**
 - Wildlife (Protection) Act: **Schedule IV**

NEW SPECIES OF CATFISH DISCOVERED IN MILAK RIVER

Recently, a new species of dwarf catfish named **Pseudolaguvia vespa** was discovered in Milak river at Mokokchung, Nagaland.

- It has two **yellow and brown stripes** on the body, a short **dorsal-fin spine** and other significant mensural characters.

Pseudolaguvia Vespa:

- Pseudolaguvia are **small catfish** inhabiting **hill streams and large rivers**.
- The specific name **vespa** is derived from Latin, **meaning wasp**.

- They are generally found in smaller stream or **channels of stream** that are found in river beds of big rivers.
- The **north eastern states of India** and neighbouring countries (Bangladesh, Nepal and Myanmar) harbour a total of 21 species of the genus Pseudolaguvia, while two species are known from the **Western Ghats of India**.

EXPANDED TIGER RESERVE MAY SEE RETURN OF GHARIALS IN ASSAM

Recently, the Assam government added around 200 KM area to the Orang National Park. This step might lead to the re-emergence of Gharial in the Brahmaputra River system.

- Gharials were wiped out from the Brahmaputra River system in the 1950s.

Orang National Park (ONP):

- **Location:** Darrang and Sonitpur districts (Assam),
- It is situated on the **northern bank of the Brahmaputra River**.
- ONP was established as a sanctuary in 1985 and declared a national park in 1999.
- Famously, It is also known as the **mini Kaziranga National Park** (IUCN site).
- ONP is also an integral **part of the Indo-Burma biodiversity hotspot**.

Flora found in ONP:

- Bombax ceiba, Dalbergia sissoo, Sterculia villosa, Trewia nudiflora, Zizyphus jujuba and Litsaea etc.

Fauna found in ONP: One-horned Rhinoceros, Leopard, Elephant, Sambar, Barking Deer, Tiger, varieties of water birds, Green Pigeon, Florican, Teal, Goose, etc.

Gharials:

- **Gharials (Gavialis gangeticus)** have **bulbous knob** (narial excrescence) present at the end of their long snout.
- They **live in clear freshwater**. Their presence **indicates the ecology** of rivers.
- **Found in:** Ganges River system of India and Nepal.
 - It includes **Girwa river** (Uttar Pradesh), **Son River** (Madhya Pradesh), **Ramganga river** (Uttarakhand), **Gandak River** (Bihar), **Chambal River** (Uttar Pradesh, Madhya Pradesh and Rajasthan), and **Mahanadi River** (Orissa).

Protection Status:

- **Wildlife (Protection) Act 1972:** Schedule I
- **CITES:** Appendix I
- **IUCN Red List:** Critically Endangered category

CHEETAHS ARE COMING BACK TO INDIA

Government of India has decided to reintroduce cheetahs, under the 'Action Plan for Introduction of Cheetah in India'.

- As part of the project, **50 cheetahs will be introduced** in various National Parks **over five years**.

Highlights

- **India will source cheetahs from Southern Africa.**
- **The locally extinct cheetah**-subspecies of India **is found in Iran.**
- Cheetahs from Southern Africa have the **maximum observed genetic diversity** among extant cheetah lineages.

Objectives of Program

- **To establish breeding cheetah populations** in safe habitats across its historical range and manage them as a meta population.
- To use the cheetah as a **charismatic flagship and umbrella species** to garner resources for restoring open forest and savanna systems
- To enhance India's capacity to **sequester carbon through ecosystem restoration** activities in cheetah conservation areas.
- Thereby **India can contribute** towards the **global climate change mitigation** goals.
- To use the ensuing opportunity for **eco-development and eco-tourism** to enhance local community livelihoods.
- **To manage any conflict** by cheetah or other wildlife with local communities within cheetah conservation areas expediently through compensation, awareness, and management actions to win community support.

Sites recommended for holding and conservation breeding of cheetah in India

- **Kuno Palpur National Park**, Madhya Pradesh
- **Nauradehi Wildlife Sanctuary**, Madhya Pradesh
- **Gandhi Sagar Wildlife Sanctuary**, Madhya Pradesh
- **Shahgarh bulge** in Jaisalmer, Rajasthan
- **Mukundara Tiger Reserve**, Rajasthan

Cheetah:

- It is a **large cat native** to Africa and central Iran.
- It is the **fastest land animal**, estimated to be capable of running at 80 to 128 km/h.
- **Habitat: Savannahs** in the Serengeti, **arid mountain ranges** in the Sahara and **hilly desert terrain** in Iran.
- The cheetah is a **carnivore** that hunts **small to medium-sized prey**.

Conservation Status

- **IUCN: Vulnerable**
- **CITES: Appendix I**
- **Wildlife Protection Act: Schedule I**

Threats

- Cheetah is threatened by several factors, like **habitat loss and fragmentation of populations**.
- **Habitat loss:** Due to introduction of commercial land use, ecological degradation.
- **Shortage of prey and conflict with other species** such as humans and large carnivores are other major threats.

MANDAVIYA CHAIRS HIGH-LEVEL MEETING TO MAKE ATMANIRBHAR BHARAT IN UREA, DAP PRODUCTION USING 'GREEN HYDOGEN'

Union Minister for Chemicals and Fertilizers chaired a high-level meeting to make Atmanirbhar Bharat in Urea and Diammonium Phosphate production by using 'Green Hydrogen'.

Hydrogen:

- Hydrogen is the **lightest element**, lighter than air.
- It is **colorless, odorless, tasteless, non-toxic**, and **highly combustible**.
- **Stars** such as the Sun are mainly **composed of hydrogen** in the **plasma state**.
- Most of the hydrogen on Earth exists in **molecular forms** such as water and organic compounds.

Features:

- It has **zero carbon content** and is a non-polluting source of energy
- It has the **highest energy content** by weight and **lowest energy content by volume**.

Significance of Hydrogen:

- Hydrogen can **cut down carbon emissions** and also diversify a country's energy basket and reduce external reliance.
- Green Hydrogen can provide **impetus** to India's Renewable Energy target of 450 GW by 2030.
- As per International Renewable Energy Agency (IRENA), Hydrogen shall make up **6 per cent of total energy consumption by 2050**.

- The Hydrogen Council Report, 2021 mentions that, global investments on hydrogen will constitute around **1.4 per cent** of the total **global energy funding by 2030**.

Green Hydrogen:

- Hydrogen produced by **splitting water into hydrogen and oxygen** using an **electrolyzer** powered by electricity from renewable energy sources such as wind and solar is known as **Green Hydrogen**.

National Hydrogen Mission:

- The mission mainly focusses on **generation of hydrogen from green power resources**.

Objectives:

- **Propose a framework** for inter alia **creating demand** for Green Hydrogen in sectors such as petroleum refining and fertilizer production
- Support for **indigenous manufacturing** of critical **technologies**
- **Research & Development** activities
- An **enabling policy and regulatory framework**.

Other Government Initiatives for Cleaner fuels:

SATAT (Sustainable Alternative Towards Affordable Transportation) Scheme:

- To set up **Compressed Bio-Gas (CBG) production plants** and make it available in the market for use in automotive fuels

The National Policy on Biofuels 2018:

- The scheme emphasizes active **promotion of advanced bio-fuels**, including Compressed Biogas.

GOBAR-DHAN (Galvanizing Organic Bio-Agro Resources):

- Aim:** To **convert cattle dung** and solid waste in farms to CBG and compost.

MINIMAL OR NO IMPROVEMENT IN AIR POLLUTION LEVELS IN LAST 3 YEARS: REPORT

Recently an analysis showing India's progress in achieving the clean air targets was released by NCAP Tracker.

- NCAP Tracker is a joint project by news portal Carbon Copy and a Maharashtra-based start-up 'Respirer Living Sciences', designed to track air pollution.
- Cities are declared **non-attainment** if they consistently fail to meet the **National Ambient Air Quality Standards (NAAQS)** over a five-year period.

Highlights:

Non-Attainment Cities

- Ghaziabad** ranked as the most polluted city out of 132 non-attainment cities with highest levels of PM 2.5 and PM 10.
- Delhi** was the second most polluted city with the highest **PM 2.5 level** and fourth in cities with the highest PM 10 level.
- PM 2.5 level continues to be more than 2.5 times the **Central Pollution Control Board (CPCB)**'s safe limit of 40 ug/m³.
- It is 20 times the WHO's safe limit of 5 ug/m³.

Continuous Ambient Air Quality Monitoring System (CAAQMS) Data:

- Delhi reduced its PM levels only **marginally**.

National Ambient Air Quality Standards (NAAQS):

- NAAQs** are the **standards for ambient air quality** notified by the CPCB under the Air (Prevention and Control of Pollution) Act, 1981.

Objectives:

- To indicate necessary **air quality levels** required to ensure the protection of vegetation, health, and property.
- To provide a uniform yardstick for the **assessment of air quality** at the national level.
- To indicate the extent and need of the monitoring programme.

Annual Standards of NAAQS:

National Clean Air Programme (NCAP):

- NCAP was implemented across India in 2019.
- **Aim:** To meet the prescribed annual average ambient air quality standards at all locations in the country.

Objectives:

- Stringent implementation of **mitigation measures** for prevention, control and abatement of air pollution
- **Augment public awareness** and capacity building measures.
- Augment and **strengthen air quality** monitoring network across the country.

Features:

- Collaborative, multi-scale and cross-sectoral coordination between relevant Central Ministries, **State Government and local bodies.**
- Focus on measures, participatory and disciplined approach.
- Use the **smart cities framework** to launch the NCAP in the smart cities under the non-attainment cities.
- Integrating the existing policies and programmes of the **National Action Plan on Climate Change (NAPCC)** and other initiatives of Government of India in reference to climate changes.

‘DIVERTING FOREST LAND FOR OTHER PURPOSES TO COST 1.5 TIMES MORE’

As per the Environment Ministry, it will cost 1.5 times more to divert forest land for other purposes, according to the revised formula to calculate the one-time payment of net present value (NPV).

Highlights:

- **Diversion** of very **dense forests** in the Eco-class 1 will now cost ₹15.95 per ha compared to ₹10.43 lakh earlier.
- **Diversion** of the **open category of forests** will now cost ₹11.16 lakh per ha compared to ₹7.44 lakh earlier.

Significance:

- This will act as a **deterrent to industries** and projects on the extent of forest land they seek to divert.

Net Present Value (NPV):

- It is a **monetary approximation** of the value that is lost when a piece of forest land has been razed.
- As per the **Supreme Court**, it must be paid by those who use forest land for non-forestry purposes and only limited exemptions are permitted.
- The payments are received by the **Compensatory Afforestation Fund (CAF).**
- CAF use them for afforestation and reforestation purpose.
 - CAF is managed by the **Compensatory Afforestation Management and Planning Authority (CAMPA).**

Process:

- It is calculated on the basis of the **services and ecological value.**
- There are **prescribed formulae** for calculating the amount which depends on the location and nature of the forest and the type

of industrial enterprise that will replace a particular area of forest.

RED SANDERS FALLS BACK IN IUCN'S 'ENDANGERED' CATEGORY

Recently, Red Sanders (Red Sandalwood) has fallen back into the 'endangered' category earlier it was classified as **near threatened** in 2018 in the International Union for Conservation of Nature's (IUCN) Red List.

Red Sanders

- It is a species of **sandalwood (Pterocarpus)**.
- It is endemic to the southern Eastern Ghats Mountain range of **South India**.
- This tree is valued for the rich **red colour** of its wood.
- The tree is not to be confused with the aromatic **Santalum sandalwood** trees that grow natively in South India.
- It is listed under **Appendix II of CITES** and is **banned from international trade**.

Distribution

- This plant occurs as an endemic species in the hills of Cuddapah, Kurnool, Chittoor, Nellore and Prakasam districts of **Andhra Pradesh** and sporadically occurring in some pockets of adjoining states of **Tamil Nadu** and **Karnataka**.
- It is known for their rich **medicinal** and **therapeutic properties**.
- They are high in demand across Asia, particularly in **China** and **Japan**, for use in cosmetics and medicinal products as well as for making furniture, woodcraft and musical instruments.

BUDDHIST MONKS' SAFFRON ROBE GIVES GREEN SPIN TO ASSAM VILLAGE

A Buddhist village in eastern Assam's Charaideo district has decided to adopt a forest named **Chala Reserve Forest** to conserve a near-extinct creeper named **Bhungloti**.

Bhungloti

- Bhungloti is a **creeper** that in combination with the pith of the roots of a jackfruit tree yielded a **saffron dye**.
- This is used for **making the robes of Buddhist Bhikkus (monks)** in Assam.

Bhikkus

- A bhikku is an **ordained male** in Buddhist monasticism.
- Male and female (bhikkhuni) monastics are **members of the Sangha** (Buddhist community).
- A person **under the age of 20 cannot be ordained** as a bhikkhu.
 - He can be ordained as a śrāmaṇera or śrāmaṇērī.

- The term bhikku comes from a verbal root meaning “to beg.”
- The bhikku’s head and face are kept **shaven**.

- He wears **three garments**—an upper and lower robe and a stole—originally made of cast-off rags **dyed with saffron**.

INDIA'S OLDEST SLOTH BEAR DIES AT VAN VIHAR NATIONAL PARK

India's oldest sloth bear died recently at the age of 40.

Sloth bear

- The sloth bear is the bear species **native to the Indian Sub-continent**.
- These bears are also known as **labiated bears** because of their **long lower lip and palate** used for sucking up insects.

Habitat Distribution:

Habitat: inhabits the tropical lowland forests of India, Nepal, Bhutan, Sri Lanka, and Bangladesh and is sometimes found in tall grasslands that provide dense cover.

Feeding Habits:

- These bears have no upper incisors, which allow their long tongue to slip through and suck up insects.
- They only feed on fruits, ants, and termites.
- **IUCN:** Vulnerable

Van Vihar national park

- **Established in:** 1979
- **Location:** Near Bhopal, Madhya Pradesh India.
- It is situated on the bank of **Upper Lake** (also known as the “Bada Talab”) which is a **Ramsar Site** and one of the two lakes of Bhoj Wetland.
- It has the status of a national park but is developed and managed as a **modern zoological park**.
 - It was formed from a **depleted forest area**.
- It is also a designated “**Conservation Breeding Centre**” for the Royal Bengal Tiger and a participating zoo for the Asiatic Lion, as well as for the Hard Ground Barasingha (**state animal of Madhya Pradesh**) and two species of Gyps Vultures.
- **Fauna:** Bengal tiger, Asiatic lion, Sloth bear, Red fox, Indian jackal, Chital, sambar, blackbuck, nilgai, four-horned antelope, wild boar, porcupine etc.
- **Flora:** The prominent tree species include Amaltas, Safed Babul, Reunjha, Landia and Saja.

RECORD OCEAN WARMING IN 2021, COASTAL COMMUNITIES SHOULD BE ON ALERT

According to a new report, the world’s oceans underwent record warming in 2021.

Highlights of the Report:

- **Oceans** have been experiencing an unambiguous **increase in heat** since the late 1980s.
- The **warming rates** in 1986-2021 represents a maximum eight-fold increase compared to 1958–85.

- The upper 2,000 metres of the ocean absorbed 235 zettajoules (ZJ) of heat in 2021 relative to the 1981-2010 average.
- **Joule** is a unit of work or energy in the International System of Units (SI).
- It is equal to the work done by a force of one newton acting through one metre.
- **Zettajoule** is a unit of energy equal to the work done when a force of one newton acts through a distance of one meter.
- The oceans soaked up 14 ZJ more heat than in 2020.

Greenhouse Gases

- There is an **energy imbalance** from the build-up of **carbon dioxide** and other **greenhouse gases**.
- The oceans are absorbing most of the heating from **human carbon emissions**.
- The heating will continue until the world reach **net-zero carbon emissions**.

El Nino and La Nina

- The effects of natural variations such as **El Nino and La Nina** cause warming and cooling global climate patterns, respectively.
- **During El Nino**, Oceans release some **amount of heat**, contributing to a **mini global warming**.
- The warmest years in terms of surface temperature are **El Nino years**.
- **During La Nina**, Oceans take up heat and bury it at depths away from the surface.

What is Ocean Warming?

- Oceans **stabilise Earth's climate** by absorbing large amounts of heat from sunlight, water vapour and other greenhouse gases.
- This heat can find its way back into the **atmosphere** through melting ice

shelves, evaporating water or directly reheating the atmosphere.

- If the ocean absorbs more heat than it releases, its heat content rises.

Impacts of Ocean Warming:

Impact on Marine Species and Ecosystems

- **Marine fishes**, seabirds and **marine mammals** face high risks from increasing temperatures
- It leads to high levels of **mortalities, loss of breeding grounds** and mass movements.
- **Coral reefs** are also affected which cause coral bleaching and increase their risk of mortality.

Impact on humans

- **Marine, freshwater capture fisheries** and **aquaculture** provide 4.3 billion people with about 15% of their animal protein.
- By increasing the vulnerability of fish species to diseases, ocean warming is a serious risk to **food security** and people's livelihoods globally.
- Economic losses vary from ten to hundreds of millions of dollars.
- It also affects **vegetation and reef-building species** such as corals and mangroves, which protect coastlines from erosion and sea-level rise.
- **Rising sea levels and erosion** particularly affect low-lying island countries in the **Pacific Ocean**, forcing people to relocate.
- Rise in sea surface temperatures is causing more **severe hurricanes** and the intensification of **El Nino events** bringing **droughts and floods**.
- This can have significant **socio-economic** and **health effects** in some regions of the world.

- Warming ocean temperatures are linked to the increase of **diseases in marine species**.

- Human's risk direct transmission of these diseases when consuming marine species.

ISFR 2021

Minister for Environment, Forest and Climate Change released the 'India State of Forest Report (ISFR) 2021' prepared by the Forest Survey of India (FSI).

Findings:

Forest Cover:

- The **total forest and tree cover** of the country is **24.62% of the geographical area** of the country.
- **Forest Cover** forms **21.71%** of the country's geographical area.
- **Increase in forest cover** has been observed in **open forest** followed by very dense forest.

Positives:

- **Top three states** showing **increase in forest cover** are:
 - **Andhra Pradesh** followed by **Telangana and Odisha**.
- **Area-wise: Madhya Pradesh** has the **largest forest cover** in the country followed by **Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra**.
- In terms of **forest cover as percentage of total geographical area**, the top five States are:
 - **Mizoram** (84.53%), **Arunachal Pradesh** (79.33%), **Meghalaya** (76.00%), **Manipur** (74.34%) and **Nagaland** (73.90%).

Negatives:

- **Five states in the Northeast** – **Arunachal Pradesh, Manipur, Meghalaya, Mizoram and**

Nagaland have all **shown loss in forest cover**.

- **35.46 %** of the forest cover is **prone to forest fires**.
- Out of this, **2.81 %** is extremely prone, **7.85%** is very highly prone and **11.51 %** is highly prone.
- There is a **decline** of **1,582 sq km** in **moderately dense forests**, or "natural forests".

New Features:

- The report, for the **first time**, **assessed** forest cover in **tiger reserves, tiger corridors and the Gir forest** which houses the **Asiatic lion**.
- The **forest cover in tiger corridors** has **increased** by **37.15 sq km (0.32%)** between **2011-2021**, but **decreased** by **22.6 sq km (0.04%)** in **tiger reserves**.
- Forest cover has **increased in 20 tiger reserves** in these 10 years, and **decreased in 32 reserves**.
- **Buxa, Anamalai and Indravati** reserves have shown an **increase** in forest cover.
- The **highest losses** have been found in **Kawal, Bhadra and the Sunderbans reserves**.
- **Pakke Tiger Reserve** in **Arunachal Pradesh** has the highest forest cover, at nearly **97%**.
- A special study for estimation of **Above Ground Biomass (AGB)** at pan-India level was introduced in ISFR 2021.

Mangroves:

- **Total mangrove cover** in the country **increased** by 17 sq Km as compared to the previous assessment of 2019.
- **Top three states** showing **mangrove cover** increase are **Odisha** (8 sq km) followed by Maharashtra (4 sq km) and Karnataka (3 sq km).

Carbon Sink:

- There is an **increase** of 79.4 million tonnes in the **carbon stock of country** as compared to the last assessment of 2019.
- The annual increase in the carbon stock is 39.7 million tonnes.

Forest Cover vs Tree Outside Forest (TOF) vs Tree Cover:

- **Forest cover** includes all areas **more than 1 hectare** in extent and has the **tree density of more than 10%**, irrespective of land use and legal status.
- **Trees outside the recorded forest area** mainly in the form of **block, linear and scattered size of patches** are included in **Trees outside Forest (TOF)**.
- **Tree cover** is an estimated area comprising of tree patches, which are **less than one hectare** and **isolated trees** outside the recorded forests.
- Thus, trees included in the tree cover constitute only a part of TOF.

India State of Forest Report:

- It is an **assessment of India's forest and tree cover**.
- It is **published every two years** by the **Forest Survey of India** under the Ministry of Environment, Forests and Climate Change.
- The **first survey** was published in **1987**, and ISFR 2021 is the 17th.

- The assessment of forest cover of the country is done using mid-resolution **Satellite data** based on **interpretation of LISS-III data** from Indian Remote Sensing satellite data (Resourcesat-II).
- **Linear Imaging Self-Scanning Sensor 3- LISS III** is a **remote sensing satellite camera** from **Indian Space Research Organization**.
- The survey is based on these **four categories of forests**:
 - **Very Dense Forest** (with tree canopy density of 70 per cent or above)
 - **Moderately Dense Forest** (tree canopy density between 40 and 70 per cent)
 - **Open Forest** (tree canopy density between 10 and 40 per cent)
 - **Scrub** (tree canopy density less than 10 per cent).
- **Open forests** currently have the **biggest share** in the country's forest cover.
- Very dense forests (the pristine natural forests) account for least forest cover.

Steps Taken by India:

National Afforestation Scheme:

- The scheme is being implemented for **afforestation of degraded forest lands**.
- The scheme is **implemented by three tier** institutional setup through:
 - State Forest Development Agency (SFDA) at the state level
 - Forest Development Agency (FDA) at the forest division level
 - Joint Forest Management Committees (JFMCs) at village level.

Objectives:

- To **ecologically restore** degraded forests

- To **develop the forest resources** with peoples' participation, with focus on improvement in livelihoods of the forest-fringe communities, especially the poor.
- To **support and accelerate** the on-going **process of devolving forest conservation**, protection, management and development functions.

National Mission for a Green India:

- It is one of the eight Missions under the **National Action Plan on Climate Change (NAPCC)**.

Objective:

- To safeguard the biological resources and associated livelihoods against adverse climate change and to recognise the vital impact of forestry on ecological sustainability, biodiversity conservation and food-, water- and livelihood-security.

The National Action Programme for combating Desertification:

- It was prepared in 2001 to take appropriate action in addressing the **problems of desertification**.

SPECTACULAR LANDSCAPE CHANGES DETECTED IN GUJARAT'S KACHCHH REGION DUE TO MAJOR EARTHQUAKES IN RECENT GEOLOGICAL PAST

As per a recent study, major earthquake events in last 30,000 years resulted in landscape changes in of the Katrol Hill Fault in the Kachchh region of Gujarat.

Highlights of the Study:

- **Seismicity in Kachchh region** is highly complex as it is characterized by **multiple seismic sources** in the form of several East-West fault lines, which release continuously accumulating tectonic stresses at intervals producing earthquakes.
- Most of the faults in the region **Kachchh Mainland Fault (KMF)**, South Wagad Fault (SWF), Gedi Fault (GF) and Island Belt Fault (IBF) are **seismically active**.
- The **Katrol Hill Fault (KHF)** has produced high magnitude seismic events during the past 30,000 years.
- However, seismic activity like the **Katrol Hill Fault (KHF)** is not apparent. This makes the task of seismic hazard estimation a scientifically complex process.

- The earthquake events resulted in changes in landscape by the **disruption of the channel** of the **Gunawari River** in the fault zone.

What is a Fault?

- A fault is a **fracture in rock** where there has been **movement and displacement**.
- It lies at the major boundaries between **Earth's tectonic plates**, in the crust, and the earthquakes result from the plates' movements.
- Plates can slowly and continuously move against each other or can **build up stress** and **suddenly jerk**.
- Most earthquakes are caused by the **sudden movements** after the stress build up.

Types:

Dip-Slip Faults

- With dip-slip faults, the **rock masses** compress on each other vertically and the rock that moves heads downward.
- They are caused by **Earth's crust lengthening**.
- When they're steep, they're called **high-angle faults**, and when they're relatively flat, they're low-angle or **detachment faults**.
- They are common in **mountain ranges and rift valleys**, which are formed by plate **movements** rather than erosion or glaciers.

Reverse Dip-Slip

- These faults are created from **horizontal compression** or contracting of Earth's crust.
- Movement is upward instead of downward.

Strike-Slip

- These faults are also called **lateral faults**.
- They are caused by **horizontal compression** parallel with the fault line, as the plates slip by each other side by side.
- These types of faults are common where **land and ocean plates meet**.

Oblique-Slip

- When there's more than one type of motion simultaneously and both types of motion are

significant and measurable, that is the location of an **oblique-slip fault**.

- They can even have **rotation of the rock formations** relative to each other.
- They're caused both by **shearing forces** and tension along the fault line.

Kutch Region:

- Kutch is a district of **Gujarat** in western India.
- It is the **largest district of India** having a population of around 2 million.
- It is an island, as it is surrounded by the **Arabian Sea** in the west and the **Gulf of Kutch** in south and southeast.
- The northern and eastern parts are surrounded by the **Great and Little Rann** (seasonal wetlands) of Kutch.
- A large part of this district is known as **Rann of Kutch** which is a shallow wetland, submerges in water during the rainy season and becomes dry during other seasons.
- It is known for its **marshy salt flats** which become snow white after the shallow water dries up each season before the **monsoon rains**.
- The district is also known for **Banni grasslands** with their seasonal marshy wetlands which form the outer belt of the Rann of Kutch.

MOUNT VICTORIA BABAX SPOTTED IN INDIA AFTER 25 YEARS

Mount Victoria Babax bird species was recently spotted in India after 25 years.

Mount Victoria Babax:

- Mount Victoria Babax is a distinctive member of the **laughingthrush family**.

- It is listed as **Least Concern** under the **IUCN Red Data list**.

Physical Characteristics:

- It has overall **brown, streaky plumage**, a pale eye and downcurved bill.

- Earlier, it was **considered conspecific** with the more widespread **Chinese Babax**.
- In **2005**, it was **split** from the Chinese Babax species on the basis of appearance and song.

Habitat and Ecology:

- It is found in **open forest, forest edges and tangles** at **elevations of 1200-2800 m**.

- The species is widespread in **Chin state of Myanmar**, and in India it is limited to a very small area in **Mizoram** (mainly Phawngpui National Park).
- **Murlen and Phawngpui** National Parks are the only two **national parks in Mizoram**.

IMD LAUNCHES INDIA'S 1ST WEATHER HAZARD AND VULNERABILITY ATLAS

Recently, India Meteorological Department (IMD) developed India's first climate hazards and vulnerability atlas.

About the Atlas:

- **Developed by:** Climate Research and Services (CRS) office, India Meteorological Department (IMD), Pune.
- It is based on **14 extreme weather events** and the risks they pose to the local population, livelihoods and **economy** of each district.
- There are **640 climate vulnerability maps** in the atlas.

Uses:

- It will act as a reference for **impact-based warnings** that IMD issue for various regions.
- The atlas will inform about the impact of certain **extreme weather events** in their region.
- It can be used to plan **climate-resilient infrastructure**.
- The atlas will provide crucial information on what kind of disasters are probable, during construction in a coastal area.

India Meteorological Department (IMD):

- IMD was established in 1875
- It is the nodal agency under the **Ministry of Earth Sciences (MoES)** for the weather-related services in the country.
- Headquarters: New Delhi.
- IMD is one of the six regional specialized meteorological centres of the **World Meteorological Organisation**.
- It forecast **tropical cyclones** in the Northern Indian Ocean region, including the **Malacca Strait**, Bay of Bengal, Arabian Sea and the Persian Gulf.

Major Activities:

- Provide **current weather and meteorological information** for optimum operation of weather sensitive activities like agriculture, irrigation, shipping aviation, off-shore oil exploration etc.
- **Warn against** severe **weather phenomena** which affects life and property.
- To conduct and **promote research in meteorology** and allied disciplines
- Archive **meteorological information** for use in various activities.
- **Detect and locate earthquakes** and evaluate seismicity in different parts of country for development projects.

BIODIVERCITIES BY 2030: TRANSFORMING CITIES' RELATIONSHIP WITH NATURE

Recently, a report titled 'BiodiverCities by 2030: transforming cities relationships with nature' was launched.

- The report was released by the BiodiverCities by 2030 Initiative (WEF), in collaboration with the Alexander von Humboldt Institute and the government of Colombia.

Findings of the Report:

- Globally, **cities contribute 80% to global GDP and 75% of global greenhouse gas emissions.**
- **Around 75% of the population on Earth will be living in cities by 2050 (currently 56%).**
- **Around 44% of global GDP in cities is estimated to be at risk of disruption from nature loss.**
- During **1990-2015**, the **global urban population increased an average of 1.9 times.**
- In the same period (**1990-2015**), the **urban footprint increased an average of 2.5 times.**
- **Urbanization accounts for 11-16% of global biodiversity loss.**

Suggestions of the report:

- Spatially (re)integrating nature in urban planning. (Elaborated in the diagram)
- Restoring nature as the backbone of cities' development.
- land-sparing interventions.
- **Nature-based solutions (NbS):** Sustainable use of nature
 - By shifting investment to **nature-based solutions (NbS)** for infrastructure, cities can build a climate-resilient environment, reducing biological impact.
 - NbS are 50% more cost-effective than "grey" alternatives. But still, they received just 0.3% of overall spending on urban infrastructure in 2021.
 - NbS investments could create more than 59 million jobs by 2030 and will also save the natural ecosystem.

BiodiverCities by 2030 Initiative

- **BiodiverCities by 2030** is a joint initiative of the World Economic Forum (WEF) and the Alexander von Humboldt Institute, supported by the Government of Colombia.
- It aims to support city governments, businesses and citizens, to **enable cities to live in harmony with nature by 2030.**
- **BiodiverCities** have **five characteristics:** guiding nature-positive actions on infrastructure, governance, economy, health and wellbeing.

POWER SECRETARY REVIEWS STATUS OF BIOMASS UTILIZATION IN THERMAL POWER PLANTS IN THE COUNTRY: SAMARTH (SUSTAINABLE AGRARIAN MISSION ON USE OF AGRO RESIDUE IN THERMAL POWER PLANTS)

Recently, Union Power Secretary chaired the second meeting of Steering Committee for SAMARTH, (National Mission on Use of Biomass in coal based thermal Power Plants).

- He focused on the status of **bio-mass co-firing** and progress of the actions being taken to promote the co-firing in the thermal power plants.

What is Biomass?

- **Biomass is plant or animal material** used as fuel to produce electricity or heat.
 - **Example:** wood, energy crops, and waste from forests or farms.
- It denotes the **biological raw material** the fuel is made of.
- Biofuel is usually reserved for **liquid or gaseous fuels**, used for transportation.

Bio-mass Co-firing:

- Co-firing is the **combustion of two or more different types of materials** at the same time.
- Co-firing can be used to improve the **combustion of fuels** with low energy content.
 - Landfill gas contains large amount of carbon dioxide, which is **non-combustible**, co-firing it with natural gas increases the heat content of the fuel and improves combustion.
- It can be used to **lower the emission** of some pollutants.
- Co-firing biomass with coal results in **less sulphur emissions** than burning coal by itself.

SAMARTH:

- Ministry of Power established a **National Mission on use of Biomass in coal based thermal power plants** (SAMARTH) in 2021.

- **Aim:** To address the issue of air pollution due to farm stubble burning and to reduce carbon footprints of thermal power generation.
- It would support energy transition in the country and the targets to move towards **cleaner energy sources**.
- **Period:** The duration of Mission is 5 years.

Objectives:

- To increase the level of **co-firing** from 5% to higher levels, to have a larger share of carbon neutral power generation from the thermal power plants.
- To take up **R&D activity** in boiler design to handle the higher amount of silica, alkalis in the biomass pellets.
- To facilitate overcoming the **constraints in supply chain** of bio mass pellets and Agro-residue and its transportation to the power plants.
- To consider regulatory issues in **biomass co-firing**.

Implementation:

- The Mission would have a Steering Committee headed by Secretary (Power) comprising of stakeholders including representatives from **Ministry of Petroleum & Natural Gas** (MoPNG), Ministry of New & Renewable Energy (MNRE) etc.
- The **Executive Committee** would be headed by Member (Thermal), CEA.
- **National Thermal Power Corporation Limited** (NTPC) will provide logistics and infrastructure support in the Mission.

Functioning of the National Mission:

- **Sub-Group 1:** To be responsible to carry out research on properties/ characteristics of biomass.

- **Sub-Group 2:** To carry out technical specification and safety aspects including research in boiler design etc.
- To handle the pilot project for higher amount of co-firing of biomass with coal in pulverized coal (PC) fired boilers.
- **Sub-Group 3:** For resolving the issues of supply chain during the mission period and sensitization programme.

- **Sub-Group 4:** To select designated labs and certification bodies for testing of Agro-based biomass pellets and Municipal Solid Waste (MSW) pellets
- **Sub-Group 5:** Be formed on regulatory framework and economics of biomass co-firing in coal based Thermal power plants.
- The proposed mission will also contribute in the **National Clean Air Programme (NCAP)**.

DIP IN EASTERN SWAMP DEER POPULATION IN KAZIRANGA

The population of the eastern swamp deer has dipped in the Kaziranga National Park and Tiger Reserve.

Eastern Swamp Deer:

Barasingha or Swamp deer

- Barasingha or Swamp deer is a deer species distributed in the **Indian subcontinent**.
- The **swamp deer differs from all other Indian deer** species in that the **antlers have more than three times**.
- Barasingha (*Rucervus duvaucelii*) has 3 subspecies: **Western Swamp Deer, Eastern Swamp Deer, Hard-ground Barasingha**.
- Swamp deer is the **state animal of Madhya Pradesh**.

Eastern Swamp Deers

- Eastern Swamp Deers are **endemic to Kaziranga Park**.
- It is **only found in Assam**.
- Their population is concentrated in the central Kohora and Bagori ranges of Kaziranga.

All species of Swamp Deer having same protection status:

- **Wildlife (Protection) Act, 1972:** Schedule 1
- **CITES:** Appendix 1
- **IUCN Red List:** Vulnerable

Kaziranga National Park (KNP):

- **Location:** Golaghat and Nagaon District, Assam.
- It is the **oldest park in Assam**.
- It is **located on the edge of the Eastern Himalaya biodiversity hotspot**.
- KNP is also declared as:
 - **National Park (1974) by Union Government of India**.
 - **World Heritage Site (1985) by UNESCO**
 - **Tiger Reserve (2006) by Union Government of India**
 - **Important Bird Area by Birdlife International**
- The river Brahmaputra flows on the North of KNP.
- The **Karbi Anglong hills are on the South** of KNP.
- The **National Highway 37 passes through the parking area**.
- **Fauna:** Great Indian one-horned rhinoceros, tigers, elephants, panthers, and bears, Ganges Dolphin etc.

- **Landscape:** Dense tropical moist broadleaf forests, tall elephant grass, rugged reeds, marshes & shallow pools.

- It has the world's largest population of **one-horned rhinoceroses**.

MISS KERALA NOT ENDANGERED: AQUARISTS

Recently, **Denison barb (Sahyadria denisonii)** was included in Schedule I of the Wild Life (Protection) Amendment Bill, 2021.

- Denison barb (Miss Kerala) is a **native freshwater fish species**.

- They are commonly found in parts of **Karnataka and Kerala**.
- It is commonly seen in the **aquarium trade**; pet collection caused it to become endangered and is its single major threat.

GLOBAL TREATY TO CUT PLASTIC PRODUCTION NEEDED URGENTLY: EIA REPORT AHEAD OF UN SUMMIT

According to Environmental Investigation Agency (EIA) a new global plastics treaty that takes into account the entire lifecycle of plastics needs to be developed urgently.

Need of the treaty

- **Presence of Microplastics** in all marine habitats.
 - These are ingested by species throughout the marine food chain
- While improvements to **waste management** are essential, there is no recycling system in the world for such plastics. This leads to **millions** of tonnes being landfilled, incinerated and leaking into the natural environment.

Objectives of the treaty

As per RIA, new legally binding agreement should be based on four pillars of action.

- **Pillar 1:** Monitoring and Reporting.
 - Monitoring and reporting on the **state** of the environment and implementation will be key

in understanding the relative success of the treaty.

- **Pillar 2:** Plastic Pollution Prevention.
 - Preventing plastic pollution from entering the environment will require **measures** that go beyond the scope of existing conventions and agreements
- **Pillar 3:** Coordination.
 - There are several existing international **conventions** and **agreements** that can make decisions relevant to particular aspects of plastic pollution.
- **Pillar 4:** Technical and Financial Support.
 - All decisions will need to be based on the best **scientific evidence** and **socio-economic assessment** and some countries will require financial assistance to tackle different aspects of the plastic problem.

Suggestion

Prioritise policies that address multiple threats acting at different timescales

- This must include measures to urgently eliminate the discharge of plastics into the

environment, phase plastic production down to sustainable levels in alignment with the United Nations-mandated **Sustainable Development Goal (SDG) 12**.

Meeting nationally determined contributions

- Countries need to work toward reducing the climate impact from extraction, processing, cracking and **polymerisation** through

targeted measures in their NDCs under the Paris Climate Agreement.

Global Biodiversity Framework

- Countries must ensure that the proposed target to eliminate plastic waste discharges by 2030 is upheld and harmonised with the objectives of a **new global plastics treaty**.

RESEARCHERS FIND A PRISTINE CORAL REEF OFF THE COAST OF TAHITI

Recently, scientists have discovered a pristine reef of giant rose-shaped corals off the coast of Tahiti.

Tahiti Island:

- Tahiti is the **largest island of the Society Islands** in French Polynesia, in the central **South Pacific Ocean**.

- The island consists of two ancient eroded volcanic cones, **Tahiti Nui and Tahiti Iti**.
- It accounts for one-third of the total land area of French Polynesia.
- **Papeete** is the capital and administrative centre of French Polynesia.

MEET S. OLTENIENSIS, A NEW PANGOLIN SPECIES THAT LIVED TWO MILLION YEARS AGO

Recently, scientists studied a fossilized arm bone in Bucharest of a new species of the Smutsia genus.

S. Olteniensis:

- **Smutsia** has previously been thought to be an African genus, with the **oldest specimen** from **South Africa** at 5 million years ago.

- It is the **youngest pangolin** ever discovered from Europe and the only pangolin fossil from **Pleistocene Europe**.
- It was named **Smutsia olteniensis** after the **Oltet river valley** in Romania, where the specimen was found.
- This specimen demonstrates that Smutsia previously had a far larger biogeographic range.
- The species lived during the **Pleistocene epoch** about 1.9 and 2.2 million years ago.

SCIENTISTS NAME NEW SPECIES OF RAINFROG AFTER GRETA THUNBERG

Recently, *Pristimantis gretathunbergae* has been discovered in Panama.

- *Pristimantis gretathunbergae* is a **species of rain frog**.

- It is popularly known as the **Greta Thunberg Rainfrog**.
- It is named after the Swedish environmentalist activist **Greta Thunberg**.

INCENTIVIZE STATES BY RANKING THEM BASED ON “EFFICIENCY AND TIMELINES IN THE GRANT OF ENVIRONMENTAL CLEARANCES

Recently, Union Ministry of Environment, Forests and Climate Change has decided to “incentivize states” by ranking them based on “efficiency and timelines in the grant of environmental clearances”.

Genesis:

- State authorities usually cleared the **Environmental Impact Assessments (EIA)** for proposed projects.
- While major ‘**Category A**’ projects like **highways** are cleared by the Union government, rest projects including **mining, thermal plants, river valley, and infra projects**, fall under the purview of state bodies.

Star ranking system:

- The **State Environment Impact Assessment Authority (SEIAA)** will implement star-rating system.
- It would be a **5-star rating system**, with 5 stars showing the highest ranking.
- In this, a high rate of clearance and those which **seeks fewer “essential details”**, will be ranked the highest.
- Stars will be determined by the **marks allotted by the union MoEFCC**, after performance evaluation. Performance evaluation includes evaluation of :
 - Time and document for granting clearance
 - Amount of **EDS (essential details sought)** etc.

- Disposal time of fresh **Terms of Reference (TOR)** or TOR amendment proposals.
- After screening, the SEIAA provides the client a Terms of Reference (TOR) document which defines the purpose and structures of the project, committee, meeting, negotiation, etc.
- SEIAA which gets a total of **fewer than 3 marks will get no star**.
- SEIAA has **more than 7 marks**, it will be ranked as **5-star (the highest ranking)**.

Issues:

- **Compromising environmental health** in name of Ease of doing business.
- **Surpassing the EDS (essential details sought) and EIA process** in the name of a speedy process.
- **Weakening the SEIAAs** and making them rubber stamps authority
- Triggering the issue of **co-operative federalism**.

Environmental Impact Assessments (EIA):

- EIA is a regulatory evaluation to estimate the relevance and impact of infrastructural projects.
- In India, the EIA process is regulated by **EIA rules 2020, released under the Environment (Protection) Act, 1986**.

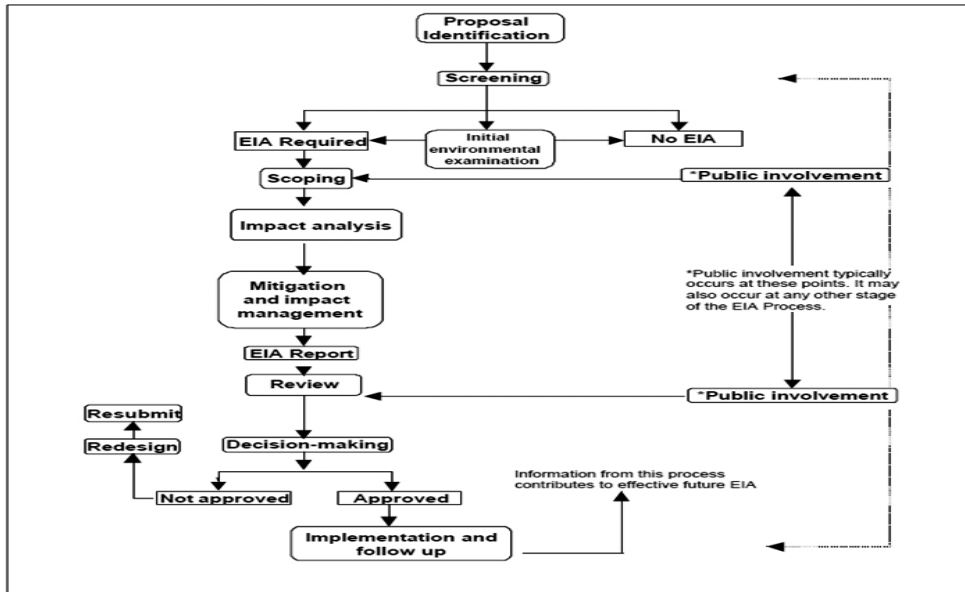


Figure 1: EIA Process³⁹

FOURTH ASIA MINISTERIAL CONFERENCE ON TIGER CONSERVATION

Recently, Minister for Environment, Forest and Climate Change, delivered India's statement at the Fourth Asia Ministerial Conference on Tiger Conservation.

- Government of Malaysia and Global Tiger Forum (GTF) organized the 4th Asia Ministerial Conference on tiger conservation.

About Tiger:

- The Tiger (**Panthera tigris**) is the **largest living cat species** and a member of the genus Panthera.
- The species is found from the **Russian far east** till the parts of North Korea, China, India and Southeast Asia.
- **Types of Tigers:** 9 Subspecies (3 Extinct)
- **Types of Tigers still alive:** 6 subspecies - Siberian Tiger, South China Tiger, Sumatran Tiger, Indochinese Tiger, Malayan Tiger and Bengal Tiger

Royal Bengal Tiger (*Panthera tigris*)

- **Also known as:** Royal Bengal tiger, Indian tiger
- **Range:** Indian subcontinent (India, Nepal, Bhutan, Bangladesh)
- **IUCN Status:** Endangered
- **Features:** Large bodies, white mutation.

Tiger Conservation Efforts in India:

Project Tiger

- It is a **tiger conservation programme** launched in April 1973 by the Government of India.
- **Aim:** Ensuring a viable population of the Bengal tiger in its natural habitats, protecting it from extinction, and preserving areas of biological importance across the tiger's range in the country.

Tiger Conservation Plan:

As per the section 38 v (3) of the Wildlife Protection Act, 1972:

- The State Government shall prepare a tiger conservation plan for management of each area referred to in sub-section (1), so as to ensure:
 - **Protection of tiger reserve** and providing tiger reserve specific habitat inputs for maintaining a viable population of tigers.
 - Ecologically compatible **land uses in tiger reserves** and areas linking one Protected Area (PA) with another PA or tiger reserve for providing dispersal habitat and corridors.
 - **Forestry operations** of regular forest divisions.

National Tiger Conservation Authority (NTCA):

- NTCA is a statutory body under the **Ministry of Environment, Forests and Climate Change**.
- It was constituted under the **Wildlife (Protection) Act, 1972**, amended in 2006 for strengthening tiger conservation.

Objectives:

- Providing **statutory authority** to Project Tiger so that compliance of its directives become legal.
- **Fostering accountability** of Centre-State in management of Tiger Reserves.
- Providing for an oversight by Parliament.

- Addressing livelihood interests of local people in areas surrounding **Tiger Reserves**.

Functions:

- To approve the **tiger conservation plan** prepared by the State Government under section 380 (1) (a) of the Wildlife (Protection) Act, 1972.
- Disallow **unsustainable land use** such as, mining, industry within the tiger reserves.
- Lay down **guidelines for project tiger** in the buffer and core area of tiger reserves.
- Provide information on **protection measures** including future conservation plan, estimation of population of tiger, status of habitats, disease surveillance etc.

Tiger Reserves in India:

Global Tiger Forum (GTF):

- GTF is the **inter-governmental international body** established to embark on a global campaign to **protect the Tiger**.
- **Formed in:** 1993 at New Delhi, India.
- It focuses on saving the remaining 5 sub-species of Tigers distributed over 13 Tiger range countries of the world.
- It has a **General Assembly meeting** every 3 years and Standing committee meetings at least once a year.
- **Aim:** To highlight the rationale for Tiger preservation throughout the world in order to safeguard the survival of the Tiger, its prey and its habitat.

THE OSM TO DEVELOP AN ECOSYSTEM OF STORAGE MANAGEMENT APPLICATIONS ACROSS ALL STATES

Department of Food and Public Distribution, Ministry of Consumer affair developed roadmap to roll out Online Storage Management (OSM) in the country.

Online Storage Management (OSM)

- The OSM envisages putting in place a **single source of information** for the food grains stored in the country for central pool through **integrating State portals with the central portal**.

- It will develop an **ecosystem of storage management applications across the states**, each being capable of capturing the **Minimum Storage Specifications (MSS)**.
- It will improve **efficiency and transparency** in stocking, storage, movement, and distribution of foodgrains.
- It will help in **driving down costs of food storage and distribution** by checking leakages in the entire process.

A PROPOSAL FOR INDIAN ENVIRONMENTAL SERVICE

The Supreme Court has asked the Government to create an Indian Environmental Service (IES) as recommended by a committee headed by former Cabinet secretary **T.S.R Subramanian** in 2014.

T.S.R Subramanian committee report on environment

- The Subramanian committee was set up in August 2014 to review the country's green laws and the procedures followed by **the Ministry of Environment, Forest and Climate Change (MoEF&CC)**.
- It had suggested **amendments** to almost all green laws, including those relating to environment, forest, wildlife and coastal zone clearances.

Recommendation

- It proposed an **Environmental Laws (Management) Act (ELMA)**, that intended full-time expert bodies **National Environmental Management Authority (NEMA)** and **State Environmental Management Authority (SEMA)**.
 - These bodies will be constituted at the Central and State levels respectively to evaluate project clearance (using technology

and expertise), in a time bound manner, providing for **single-window clearance**.

- They suggested a fast-track procedure for linear projects (roads, railways and transmission lines), power and mining projects and for projects of **national importance**.
- The Air Act and the Water Act is to be subsumed within the **Environment Protection Act**.
- The existing **Central Pollution Control Board** and the **State Pollution Control Boards**, which monitor the conditions imposed on the industries to safeguard environment are proposed to be integrated into NEMA and SEMA once the new bodies come into existence.
- It suggested an **appellate mechanism** against the decisions of NEMA/SEMA or MoEF&CC, in respect of project clearance prescribing a three-month deadline to dispose appeals.
- It proposed a **National Environment Research** institute on the lines of the Indian Council of Forestry Research and Education.

Aim: To bring in the application of high-end technology in environment governance and an **Indian Environment Service** to recruit qualified

and skilled human resource in the environment sector.

HYDROGEN COSTS TO FALL OVER 95% BY 2050, PREDICTS REPORT

According to a new analysis hydrogen will be cheaper by 95 per cent by mid-century.

Key highlights

- Investments of \$10 trillion (Rs 744 lakh crore) in the **hydrogen sector** by 2050 will pull down the cost of the fuel and disrupt the energy sector.
- The cost of green hydrogen will fall from about **\$3.70** per kilogram today to just over \$1 kg in 2035, and around **\$0.75** kg by 2050.
- The annual demand for hydrogen will hit **771 million tonnes** globally by 2050, as the industry accelerates decarbonisation efforts.

- **Green hydrogen technology** will fill the gap between renewable energy and **Net Zero carbon emissions**.
- **Green hydrogen** is defined as hydrogen produced by splitting water into hydrogen and oxygen using renewable electricity.
- India consumes about **six million tonnes** of hydrogen every year for the production of ammonia and methanol in industrial sectors, including fertilisers and refineries.
- This could increase to **28 million tonnes** by 2050, principally due to the rising demand from the industry, but also due to the expansion of transport and power sectors.

CLIMATE CHANGE IMPACT IN COLD ARID DESERT OF NORTH-WESTERN HIMALAYA: COMMUNITY BASED ADAPTATIONS AND MITIGATIONS

Less snow, high temperatures has affected the lives of people in Himalayan cold desert.

Climate Change in the Region:

- The **warm winters** and **unexpected snowfall** are affecting the town of Kaza, which is the largest commercial centre of Spiti Valley.
- **Kaza** is the gateway to the Himalayan cold desert that spans **Lahaul-Spiti** and **Kinnaur** districts of Himachal Pradesh in the south to Ladakh in the north.
- The rainfall has decreased in Lahaul-Spiti & Kinnaur in the past three decades (1989-2018).
- The area under Ravi, Sutlej, Chenab and Beas basins have shrunk in 2020-21.

Impact of Climate Change:

Rise in Temperature

- **Ladakh's average temperature** has increased in last 3 decades.
- There is a rapid and significant **temperature increase over Leh** in 1991-2013 after a short period of cooling between 1979 and 1991.
- A declining trend can be seen in the **annual precipitation** between 1995 and 2012.

Glaciers

- The **Pensilungpa glacier** in the **Zaskar Valley** had shrunk by 36% between 1962 and 2012 due to increasing temperature and low winter precipitation.

Rainfall

- **Leh** and its surrounding mountainous regions were also experiencing **short bursts of rainfall**.

Biodiversity

- It also had an impact on the region's **biodiversity**, around its lakes and wetlands.
- **Bird species** like: the magpie, sparrows and red-billed chough have decreased in number.

Ladakh Desert:

- It is a large area of the **northern and eastern Kashmir** region in the northwestern Indian subcontinent.
- It is divided between Pakistan, as part of **Gilgit-Baltistan** and India, as part of **Ladakh Union Territory**.
- It covers about 45,000 square miles and contains the **Ladakh Range**.

- Ladakh Range is a southeastern extension of the **Karakoram Range**, and the upper **Indus River valley**.
- In southeastern Ladakh lies **Rupshu**, an area of large brackish lakes.
 - To the northwest of Rupshu lies the **Zaskar Range**.
 - Zaskar is drained by the Zaskar River which flows northward and joins the Indus River below Leh.

Climate:

- The climate of Ladakh is **cold and dry**.
- Average **annual precipitation** is 80 mm.
- Vegetation is confined to valleys where tamarisk, shrubs, furze and other plants supply firewood.
- **Principal products:** wheat, barley, millet, peas, beans, and turnips.
- **Woolen cloth** and other textiles are the primary manufactures.

FLY ASH MANAGEMENT AND UTILISATION MISSION: WILL IT BOOST HANDLING, DISPOSAL OF BY-PRODUCT

Recently, the National Green Tribunal (NGT) has directed the Centre to set up a fly ash management and utilization Mission for monitoring and use of the remains of burnt coal.

- NGT directed center for scientific management and utilization of remains of burnt coal.
- It has also asked to take adequate action against non-compliant power plants.

Genesis:

- coal-based **thermal power plants (TPPs)**, which generate electricity, also

produce wastes or By-products such as Fly ash and Bottom Ash.

- Since 1999 Union Environment ministry had directed the use of fly ash and mandated a target date for all thermal power plants to comply by ensuring 100% utilization. But still, it is not fully implemented.

Fly Ash and Bottom Ash:

- When Coal is burnt in the furnace, it produces ash particles. These ash particles cannot be disposed of openly because they have hazardous elements like **sulphur, mercury, aluminium,**

chromium, selenium, lead, radioactive materials (Uranium, Thorium), etc.

- Ash particles which **are heavy in nature** and could not fly away, and hence stored at the bottom, **called Bottom ash.**
- Ash particles that are **not heavy in nature** and could fly away that is captured and stored, so-called as **Fly ash.**
 - Due to its non-heaviness, fly ash is **very fine in nature.**
 - Commonly it has been seen disposing openly and resulting in environmental pollution. Mainly **air and water bodies get contaminated due to it.**

Use of Fly Ash:

- Cement-based products, such as poured concrete, concrete block,
- brick, Portland cement concrete, Asphalt concrete,
- in geopolymers, Mineral extraction, Waste treatment, and stabilization
- can be used as fertilizer Soil stabilization
- used as embankment and mine fill
- can be used in Highway development etc

SPOT-BILLED PELICANS DYING EN MASSE IN NAUPADA SWAMP

Recently, nematode infestation has led to mass mortality of adult spot-billed pelicans at Telineelapuram Important Bird Area (IBA) in Naupada swamp of Srikakulam district, Andhra Pradesh.

Spot-Billed Pelicans:

- The spot-billed pelican belongs to the family **Pelecanidae.**
- **Habitat:** The species roost in trees near water bodies like: ponds, lakes, streams and rivers.

Physical features

- The **adult pelican** has a dull white head and neck.
- The feathers on the hind neck are curly and form a grayish nape crest.
- The **tail is brownish** & the pouch is **pink** with speckles.

- The upper mandible carries **speckles.**
- The tip of the bill is **orange.**

Distribution:

- The breeding population of these species is limited to India, Sri Lanka and Cambodia.
- In the non-breeding season, they are recorded in Nepal, Myanmar, Thailand, Laos and Vietnam.

Status and Conservation:

- The **global population of the species** is around 13,000 to 18,000 individual birds.
- **Threats: habitat loss,** fishing activities, poaching of chicks and eggs, agricultural pollutants and silting up of water bodies.

IUCN Status: Near Threatened.

'INACCURACIES, PROCEDURAL VIOLATIONS' IN GREAT NICOBAR DRAFT ENVIRONMENT IMPACT ASSESSMENT REPORT

Recently released draft environment impact assessment (EIA) report for development project in the Great Nicobar Island have raised serious questions related to submission of incorrect or incomplete information.

Great Nicobar:

- Great Nicobar is the **southernmost** and **largest of the Nicobar Islands** of India, north of Sumatra.
- The island is home to the **Shompen people**.
- The Great Nicobar Island houses **rivers** such as **Dogmar, Alexandra and Galathea**.

Ecology:

- The Great Nicobar Biosphere Reserve harbours a wide spectrum of ecosystems comprising **tropical wet evergreen forests, mountain ranges and coastal plains**.

Environmental Impact Assessment (EIA):

- Environmental Impact Assessment (EIA) is a tool used to identify the **environmental, social and economic impacts of a project** prior to decision-making.
- It is a process of **evaluating the likely environmental impacts** of a proposed project or development, taking into account inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse.
- EIA in India is **statutorily backed by the Environment Protection Act, 1986** which contains various provisions on EIA methodology and process.
- It covers developmental sectors such as **industries, thermal power projects, mining schemes etc.**

Objectives:

- To **predict environmental impacts** at an early stage in project planning and design.
- To find ways and means to **reduce adverse impacts** and shape projects to suit the local environment
- To **present the predictions** and options to decision-makers.

EIA cycle comprises of four stages:

- Screening
- Scoping
- Public hearing
- Appraisal

Categorization of projects:

- **Category A** projects require mandatory environmental clearance and thus they do not undergo the screening process.
- **Category B** projects undergoes screening process and they are classified into two types.
 - **Category B1** projects mandatorily requires EIA.
 - **Category B2** projects **do not require EIA**.
- Thus, Category A projects and Category B, projects undergo the complete EIA process whereas Category B2 projects are excluded from complete EIA process.

Importance of EIA:

- EIA links environment with development for environmentally safe and sustainable development.
- It provides a **cost-effective method** to eliminate or minimize the adverse impact of developmental projects.

- EIA enables the decision makers to analyse the effect of developmental activities on the environment well before the developmental project is implemented.
- It encourages the adaptation of mitigation strategies in the developmental plan.

CLIMATE CHANGE WILL FORCE TRANSBOUNDARY FISH STOCKS TO MOVE FROM HABITATS, MIGRATION PATHS: REPORT

Recently, a study on transboundary fish stocks was published.

Highlights of the report

- Fish stocks that move across two or more **exclusive economic zones (EEZ)** would be greatly impacted by climate change.
- By 2100, a total of 45 % of **fish stocks** are expected to shift from their historical habitats and migration paths globally and 82

What are fish stocks?

- The term fish stock usually refers to a **particular fish population** that is more or less isolated from other stocks of the same species.
- In a particular fishery, the fish stock may be one or **several species**.

Concerns associated with shifting stocks

- Many countries that are highly dependent on fisheries for **livelihood** and **food security** would emerge as hotspots for transboundary shifts. This can lead to **conflicts** between countries.
- Many marine species will shift their **habitat** to remain within their optimal environmental niche.

% of EEZ waters would experience at least one shifting stock.

- EEZ of **Latin America, the Caribbean, Melanesia and Polynesia** are set to experience shifts significantly earlier as water temperatures increase.
- Countries in northern Europe and eastern Asia would experience range shifts later.
- Robust warming was observed in the **seven maritime domains** - Indian Ocean, South Atlantic, North Atlantic, Northwest Pacific, North Pacific, Southern oceans and the Mediterranean Sea.
- It can change the size of fish remaining, as well as how they **reproduce** and the speed at which they mature.

Suggestion

- Existing international **fisheries agreements** need to be assessed for their capacity to address the social-ecological implications of climate-change-driven transboundary shifts.
- Some of these agreements will need to be **adjusted** to limit potential conflict between the parties of interest.
- New agreements will need to be **anticipatory** and consider these concerns and their associated uncertainties to be resilient to global change.
- A **Climate risk hotspot** for transboundary fisheries management should be made.

- There is need to Identify range shifts in the shared distribution of **transboundary stocks**.

Exclusive economic zone

- It is prescribed by the 1982 **United Nations Convention on the Law of the Sea**.
- It is an area of the sea in which a **sovereign state** has special rights regarding the exploration and use of marine resources,

including energy production from water and wind.

- It stretches from the baseline out to **200 nautical miles (nm)** from the coast of the state.
- It is also referred to as a **maritime continental margin**.
- The term does not include either the territorial sea or the continental shelf beyond the 200 nautical mile limit.

NEW GENUS OF PARASITIC FLOWERING PLANT DISCOVERED FROM NICOBAR ISLANDS

A genus named **Septemeranthus** was found on the periphery of the tropical forest in one of the biodiversity hotspots referred to as the Nicobar group of islands.

- The genus **Septemeranthus** grows on the plant species **Horsfieldia glabra(Blume) Warb.**
- The parasitic flowering plants have a **modified root structure** spread on the stem of the tree.
- The genus belongs to the **family Loranthaceae**, a hemi-parasite under the sandalwood order Santalales and is of widespread importance.
- **Plants which are hemi-parasites** are partially **dependent on their host plants for nutrition**.
- It has **distinct vegetative morphology, inflorescence architecture and floral** characters.

- The leaves of the plant are **heart-shaped** with a **very long tip**.
- The ovary, fruit and seeds are '**urceolate**' (**earthen pot-shaped**).
- The flowers have **five persistent bracts** having conspicuous margins.

Hemi-parasites

- They are commonly referred to as **mistletoes** that contain 18 families, 160 genera and over 2,200 species.
- They **need a host tree or shrub** in order to thrive.
- They exhibit a worldwide distribution in **tropical as well as temperate habitats**.
- They play an important role as they provide food for **frugivorous birds**.

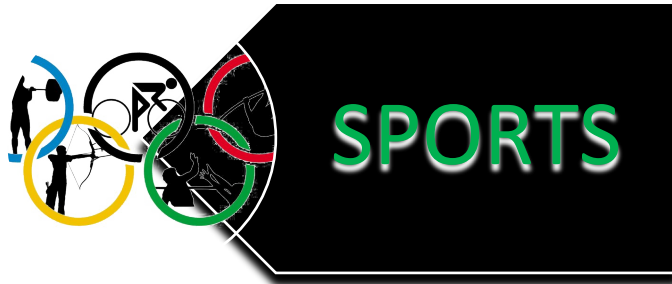
NEW STUDY DOCUMENTS THE SONGS OF FROG SPECIES

Recently, a new study has documented the songs of two frog species.

Semantics and Frogs:

- The frogs use **semantics to communicate a mating call** to attract a member of the opposite sex and to **guard one's territory** against other males.

- **Humayuni** produces **calls with two notes** (ascending and descending) whereas **Amboli** produces calls with **six-note types**.
- Individuals of **Humayuni** produce a **single ascending note** but **in the presence of another male** of the same species, the individual **adds up to seven descending notes** to the ascending note.
- Individuals of **Amboli** use a **different set of note types when alone** or when in the presence of another male but use note types 4–5 when engaging in a physical fight with another male.
- Both species of anurans are **endemic to the Western Ghats**.



MINISTRY OF CIVIL AVIATION RELEASES DRAFT ‘NATIONAL AIR SPORTS POLICY’ FOR PUBLIC FEEDBACK

Recently, Ministry of Civil Aviation released draft National Air Sports Policy (NASP) for public feedback.

National Air Sports Policy (NASP):

- **Governing body:** Air Sports Federation of India (ASFI).
- **Aim:** To make India one of the top air sports nations by 2030.

Objectives:

- Promote an **air sports culture** in the country.

- **Adopt international practices** in safety including air sports infrastructure, equipment, operations, maintenance and training.
- Develop India as a preferred **global hub for air sports**.
- Enhance participation of Indian sportspersons in global air sports events.
- Promote design, development and manufacturing of air sports equipment in India in line with the **Aatmanirbhar Bharat Abhiyan**.
- NASP seeks to leverage India’s potential for air sports given its large **geographical**

expand, diverse topography and weather conditions.

Features:

- **Coverage:** covers sports like aerobatics, ballooning, drones, paragliding, micro lighting and paramotoring, skydiving etc.
- ASFI will be established as the **apex governing body**.
- Associations for each air sport will handle day to day activities e.g., Paragliding Association of India or **Skydiving Association of India** etc.
- The associations shall be accountable to ASFI for providing safe, affordable, accessible and sustainable conduct of their respective air sport.
- ASFI shall represent India at **Federation Aeronautique Internationale (FAI)** and other global platforms related to air sports.
- All competitions in India will be conducted as per the guidelines laid down by FAI.
- FAI, headquartered in Lausanne, Switzerland is the world governing body for air sports.
- NASP focus on ensuring **international practices in safety**.
- Inability to enforce safety standards by an air sports association may lead to penal action by the ASFI including financial penalties, suspension or dismissal.
- **All persons and entities** providing air sports services shall be required to register

as members of the respective air sports associations.

- An **airspace map** of India has been published on Directorate General of Civil Aviation (DGCA) Digital Sky Platform.
- The map in the platform segregates the entire airspace of India into red zone, yellow zone and green zone.
- Operation in **red and yellow zones** requires permission from Central Government and the concerned Air Traffic Control authority.
- Operation in **green zones** for aircraft with all-up weight up to 500 kg does not require any permission.
- The Government will consider, allowing **import of air sports equipment** without any import duty.
- Schools, colleges and universities will be encouraged to have air sports included in their curriculum.
- Long term funding for development of air sports in India shall come from **corporate investors**, membership fees, events and media rights.
- ASFI may seek **financial support** from Government of India for promotion of air sports.
- Government will focus on **rationalizing the GST rate** on air sports equipment to 5% or less.

BEIJING WINTER OLYMPICS GAMES: HOW ARTIFICIAL SNOW IS MADE AND WHY IT IS A THREAT TO THE ENVIRONMENT

China is using artificial snow for the upcoming winter Olympics. Artificial snow is recommended for winter competitions.

- Due to the **reduction in natural snowfall**, the usage of artificial snow is prevalent.

- In the **2014 Sochi Olympics, Russia had used 80%** of artificial snow.

Natural snow:

- Atmospheric water vapor gets frozen into ice crystals and starts falling. This phenomenon

is termed as snowfall and the precipitated item is termed as snow.

Artificial snow:

- When Snow is injected with water to harden it and then **treated with chemicals to keep the hardened snow in place**, it is known as artificial snow or **Fake Snow**.
- It is **made of a polyacrylate polymer, like sodium polyacrylate**, which is shredded to produce flakes of a similar size and color to real snow.
 - **Sodium polyacrylate:**
 - It is a superabsorbent polymer, also known as a **hydrogel**.
 - It can **absorb up to 800 times its weight in water**.
 - It is an ideal material for producing artificial snow.

Advantages of Artificial snow:

- **Safe and non-toxic** and can be used in **decorations, sports, etc.**
- Can be **used in snow guns to control air pollution**.
- For the sportsperson, fake snow surface **provides speed and stability**.

Disadvantages of Artificial snow:

- Fake snow creates harder and faster slopes. This **increases the risk of athletes falling and hurting**.
- Artificial snow **can create ice layers on plants and damage them**. This is why it is **non-eco-friendly**.
- Mostly, the waste or untreated water is used for making snow. It has raised **concerns about left-over chemicals and other contaminants in the wastewater**.
- Artificial snow **demands huge amount of water**. This is concerning in areas where there is scarcity of water in winter.