

**RAJA SIR'S**  
Cracking IAS Academy  
Since 2005 - Feel The Pulse of UPSC

MONTHLY CURRENT AFFAIRS MAY 2023

# IAS GOOGLE



## SUDAN CRISIS



**IAS GOOGLE**

Redefining your Google

Led by Raja Sir's Cracking IAS

## CONTENTS

### POLITY

- [Society of Indian Law Firms raises concerns before BCI over entry of foreign lawyers](#)
- [CERT-in may be exempted from giving information under RTI Act](#)
- [Odisha CM disburses Rs 877 crore KALIA assistance to 43 lakh farmers in state](#)
- [Regulator pulls up companies, auditors for flouting Ind As norms](#)
- [Parliamentary panel asks CAT to dispose of cases pending for over 10 years on priority basis.](#)
- [Sale of Electoral Bonds at Authorized Branches of State Bank of India \(SBI\)](#)
- [Anushka Sharma is liable to pay tax as she owned copyright on her stage performances: Sales Tax dept tells HC](#)
- [Lokpal disposed of 68% corruption complaints against public servants without any action: Parliamentary panel report](#)
- [Himachal Pradesh considering legalising cannabis cultivation, says CM Sukhvinder Singh Sukhu](#)
- [Election Commission grants national party status to AAP](#)
- [Amit Shah launches vibrant villages program on China border in Arunachal Pradesh](#)
- [In New Delhi, George Soros is old, dangerous and on a watchlist — at UN, he isn't a problem](#)
- [Union Minister of Power and New & Renewable Energy released the report of the State Energy Efficiency Index \(SEEI\) 2021-22 in New Delhi.](#)
- [National Credit Framework to be internationally recognised through bilateral agreements: UGC chairman](#)
- [ICSI to rope in experts, regulatory members on secretarial and auditing standards board](#)
- [Preventive detention laws colonial legacy, must be used only in rarest of rare cases: Supreme Court](#)
- [Centre tightens fund flow rulebook for CSS schemes](#)
- [35.7 lakh vacancies registered on National Career Service \(NCS\) in year 2022-23](#)
- [SC judge recuses from hearing Belagavi border dispute case](#)
- [SC dismisses two pleas challenging Delhi HC verdict on Agnipath scheme](#)
- [Retired district judge among 12 picked by SC collegium for post of HC judge](#)
- [India's tallest Ambedkar statue set for inauguration today](#)
- [Demand for same-sex marriage's recognition is 'urban elitist view': Centre](#)
- [Chhattisgarh CM writes to PM seeking inclusion of higher quota Bills in Ninth Schedule](#)
- [Justice Joseph recuses from hearing plea against Goel's appointment as EC](#)
- [India's population to edge ahead of China's by mid-2023, says UN](#)
- [SC Collegium recalls Orissa CJ's transfer proposal](#)
- [FSSAI needs an energy shot to regulate processed food](#)
- [Surat court rejects Rahul's plea for stay on conviction](#)
- [Houses unfinished, Bihar serves notices to 2.21 lakh beneficiaries of PMAY-G](#)
- [To cut at root of narcotics, Centre plans drive against poppy, cannabis](#)
- [Demystifying Kesavananda Bharati case, webpage delves deep into history](#)
- [Murals in the making: ethnic themes 'sweep' across walls of 2,500 polling booths](#)
- [How can a juvenile be tried as an adult in Court?](#)
- [Governors should not sit over Bills, says Supreme Court](#)
- [SC to set date to hear plea to abolish Collegium](#)
- [Vibrant Villages plan to be merged with PM Gati Shakti](#)

- [Why is PM CARES Fund not subject to public audit?](#)
- [HC orders 'triple tests' for couple facing legal hurdles to have child through surrogacy](#)
- [Mahanadi row: experts question timing of Chhattisgarh's release of water into river](#)
- [Centre tells States to scrap levies on power generation](#)
- [Union Minister for MSME launches the revamped CGTMSE Scheme](#)
- [TRAI announces changes in incoming calls for mobile users from May 1](#)
- [ULIP Integration with Digital Systems of Coal Ministry kicks off](#)

## ECONOMY

- [FTP expands export promotion scheme to include PM MITRA](#)
- [UK joins trans-Pacific trade bloc in a deal likely to boost GDP by less than 0.1%](#)
- [Audit process to be fully digitalised from April 1](#)
- [Regulator pulls up companies, auditors for flouting Ind As norms](#)
- [IFC announces it will stop clients funding new coal projects](#)
- [Cost inflation index number for FY 2023-24 \(AY 2024-25\) used for LTCG calculation notified by CBDT](#)
- [Four states raise Rs 5,800 crore through SDLs at bond auction](#)
- [NSE Indices launches India's first-ever REITs and InvITs Index](#)
- [RBI issues norms for acceptance of green deposits by banks](#)
- [A big fat problem in milk: What's driving up prices?](#)
- [India plans to appeal against WTO ruling on IT tariffs](#)
- [Centre will clamp down on Ponzi apps, says FM](#)
- [SEBI bans five entities in LIC front running case, impounds ₹2.44 crore](#)

## INTERNATIONAL RELATIONS

- [India initiates anti-dumping probe into import of sodium cyanide from China, EU, Japan, Korea](#)
- [UN to start allowing deep sea mining operations from July](#)
- [India elected to 'highest' UN statistical body for 4-year term](#)
- [ICJ rejects Venezuela stance on Guyana border dispute](#)
- [Chinese planes cross Taiwan Strait median line](#)
- [61 dead after clashes between Sudan Army and rivals enter second day](#)
- [India, Russia agree to deepen trade and economic relations](#)
- [SCO members must pool resources, expertise on disaster resilience: Shah](#)
- [India to host SCO Defence Ministers' meeting this week](#)
- [India calls UN system 'anachronistic'](#)

## ENVIRONMENT

- [Scientists Discover Novel Species of Ground-Dwelling Gecko in Forests of Kerala](#)
- [More than 90% of the world's salt marshes may soon succumb to sea level rise: Study](#)
- [Bandipur Tiger Reserve recently completed 50 years as a Project Tiger Reserve.](#)

- [New genus and species of bagworm moth discovered in Kerala](#)
- [Rail tracks may be shifted out of tiger reserve to protect wildlife in Palamu](#)
- [Asola Bhatti Wildlife Sanctuary in Delhi to get 2nd native seed nursery](#)
- [In a first, Eravikulam National Park gets a fernarium](#)
- [Anurag Thakur congratulates Anjali Sharma for conquering Mount Kilimanjaro in Africa, wearing Luanchari](#)
- [New butterfly species discovered in Kerala](#)
- [House panel suggests study on impact of black carbon on Himalayan glacier](#)
- [Triple trouble for Gulf of Mannar islands, study finds](#)
- [Scientists Find Deepest-Ever Fish, 5 Miles Beneath Ocean's Surface](#)
- [Some people living near Colombian volcano are loath to evacuate](#)
- [Kerala High Court orders translocation of Arikompan to Parambikulam Tiger Reserve](#)
- [Three persons arrested for killing water snake near Arakkonam](#)
- [NGT revokes stay on demolition of five studios in Madh Island](#)
- [Miyawaki forest coming up at Deonar in Govandi](#)
- [Large deposits of 15 rare earth elements found in Andhra Pradesh](#)
- [Periyar Tiger Reserve gets top rank in management review, none 'poor'](#)
- [PM inaugurates program 'Commemoration of 50 years of Project Tiger' in Mysuru, Karnataka](#)
- [Prime Minister Modi interacts with elephant whisperers at Theppakadu elephant camp in Nilgiris](#)
- [MEE rating of Nagarjunasagar-Srisailem Tiger Reserve improves to 'Very Good'](#)
- [Researchers found new frog species in Meghalaya's Siju cave](#)
- [Volcano eruption in Russia's Kamchatka spews vast ash clouds](#)
- [FAHD Minister, Shri Parshottam Rupala to launch "Animal Pandemic Preparedness Initiative \(APPI\)" under National One Health Mission](#)
- [Denmark latest EU country to plan Energy Charter Treaty exit](#)
- [G-7 Ministers commit to work for carbon-free electricity by 2035](#)
- [Pittas find new haven in Odisha districts](#)
- [Seek CSR funds to clear forests of invasive species, says High Court](#)
- [Synchronous lighting by fireflies recorded in another range of Anamalai Tiger Reserve](#)
- [Ganga mission clears projects for ₹638 crore](#)
- [Conservationists in Sri Lanka slam plan to export monkeys to China](#)
- [Millions of olive ridleys make it to sea after Odisha beach hosts record turtle nesting](#)
- [UN reports 'off the charts' melting of glaciers](#)
- [Reviving a 'dead' river: a cultural event to celebrate legacy of Yamuna](#)
- [South African cheetah translocated to KNP dies](#)
- [After death of two cheetahs, M.P. seeks new site for the felines](#)
- [Scientists discover second largest blue hole in the world off Mexico Coast](#)
- [SC modifies order on ESZ around protected forests](#)
- [The threat of rising sea levels](#)
- [EAC clears pen monument project in T.N.](#)
- [India To Join International Climate Action In Civil Aviation From 2027](#)

## SCIENCE & TECHNOLOGY

- [Unified gas pipeline tariff to boost access in far flung areas](#)
- [Kolkata Man Infected By Killer Plant Fungus Chondrostereum Purpureum, In World's](#)

### First Such Case

- [Powerful 'X-class' solar flare slams Earth, causes radio blackouts. There could be more.](#)
- [IISc Bangalore device can help power streetlights](#)
- [Twitter open-sources recommendation algorithm code](#)
- [Two-drug combination may offer a new way to treat inflammatory bowel diseases, study suggests](#)
- [What is Hikikomori, the phenomenon that has 1.5 million Japanese living in isolation?](#)
- [Indian National Centre for Ocean Information Services deploys two more deep sea gliders into Bay of Bengal to study climate change](#)
- [Drug-resistant bacteria, linked to Indian eye drops, can spread person to person: Report](#)
- [10000 Indian genomes to be sequenced by year-end](#)
- [Tick-borne encephalitis detection in England](#)
- [On the road ahead for the LIGO-India project](#)
- [Eight govt entities hit by info-stealing malware](#)
- [Country's first 3D-printed post office coming up in Bengaluru](#)
- [Astronomers used machine learning to mine data from South Africa's MeerKAT telescope](#)
- [NM-ICPS Mission can accelerate technology translation and commercialization through TIHs spanning all over the country](#)
- [In pursuit of a 'magic number', physicists discover new uranium isotope](#)
- [New low-cost substrates can enhance sensitivity of analytical tools for detecting toxic pollutants](#)
- [Einstein was right about invisible dark matter, massive new map of the universe suggests](#)
- [Delegation from IRRI Philippines visits PAU to discuss rice project](#)
- [What is magnetoresistance? It's one more thing graphene does differently](#)
- [Here's why Visakhapatnam beaches are glowing a shimmering blue](#)
- [DST Institute to partner Indian Navy in developing secure maritime communications using Quantum Technology](#)
- [Heatstroke deaths in Mumbai](#)
- [Union Cabinet gives nod for ₹6,003 crore Quantum Mission](#)
- [Microbes at the top of the world](#)
- [Gsk Pharmaceuticals Launches Its Shingles Vaccine In India](#)
- [WHO flags contaminated cough syrup made in India](#)
- [The BCG vaccine, did not provide any significant protection against Covid-19 infection](#)
- [Sun halo spotted in Prayagraj leaves many awe-inspired.](#)
- [Can psychedelics treat depression?](#)
- [Despite availability of funds, patients with rare Fabry Disease yet to be given treatment, says support society](#)

### DEFENCE & SPACE

- [ISRO's Reusable Launch Vehicle aces landing test](#)
- [India-U.S. air exercise 'Cope India' to begin next week, Japan to be observer](#)
- [Russia to form special division of Poseidon torpedo carriers, TASS reports](#)
- [Indigenous Anti Tank Guided Missile, Amogha-III tested successfully](#)
- [India-Sri Lanka maritime exercise begins in Colombo](#)

- [Skyroot Aerospace test-fires 3D-printed Dhawan II engine for record 200 seconds](#)
- [Anti-submarine rockets developed by 2 Pune labs successfully tested from INS Chennai](#)
- [Joint Military Exercise 'Ex KAVACH' concludes at Andaman and Nicobar Command](#)
- [Europe to launch Juice mission to explore Jupiter and its icy moons on April 13](#)
- [Study carried out by the researchers were able to achieve the most accurate calibration of Cepheid stars.](#)
- [Ningaloo 'hybrid' solar eclipse on April 20: What is it and where to watch](#)
- [The solar system was hit with a gamma-ray burst so bright, it blinded scientists' equipment in space](#)
- [Indian Navy conducts exercise 'Prasthan' off Mumbai coast](#)
- [NASA Announces the Astronaut Crew for Artemis II Lunar Flyby](#)
- [Webb Reveals Never-Before-Seen Details in Cassiopeia A](#)
- [NASA's High-Resolution Air Quality Control Instrument Launches](#)
- [Iran 'successfully' tests kamikaze drone with 50-kg warhead](#)
- [It was the second joint warmest March on record: Copernicus](#)
- [Four Rafale jets for multilateral exercise Orion in France](#)
- [PSLV-C55 mission: ISRO to carry out in-orbit scientific experiments using spent PS4](#)
- [Galaxy mergers ignite 'quasars' — the most powerful celestial objects](#)

## SOCIETY

- [President, PM, HM, CM greet people of Odisha on 'Utkal Dibasa'](#)
- [How a 'hybrid' gamosa sparked protests across Assam](#)
- [Kathua's 'Basohli Painting' gets GI tag](#)
- [Mahavir Jayanti: Birth anniversary of Lord Mahavira](#)
- [Kurmi community protests in West Bengal: Train services disrupted in Bankura, Purulia and West Midnapore](#)
- [Muthuvan tribal community coexisting with wild animals](#)
- [Proposed Dibang Tiger Reserve and Idu Mishmi people](#)
- [Assam set to attempt a world-record Bihu performance](#)
- [PM participates in 125th Anniversary celebrations of Sri Ramakrishna Math](#)
- [Indian-American Mathematician CR Rao Awarded 'Nobel Prize' in Statistics](#)
- [UN Commission's goal of achieving quality education for all is 'seriously off track'](#)
- [India to bridge language gap with neighbours](#)
- [Ancient soccer scoreboard found at Yucatan peninsula, Mexico](#)
- [Bishnois raise concern over felling of Kheiri trees](#)
- [Gond painting from Madhya Pradesh receives GI tag](#)
- [Amit Shah urges people to visit India's 'first village' Kibithoo in Arunachal Pradesh](#)
- [LG Sinha Says His Admin Steering Change in Socio-economic Landscape of J-K with Citizen's Participation](#)
- [Faith in children's vaccines has gone up in India, says UNICEF](#)
- [Hakki Pikki: caught in Sudan's civil war](#)
- [Pushkaralu festival returns to the Ganga after a gap of 12 years](#)
- [The Congress leader took part in Basava Jayanti celebrations in Karnataka](#)
- [World Malaria Day](#)
- [Don't 'perpetuate prejudices' against communities, Arunachal CM urged](#)
- [Manamadurai pottery from the state of Tamil Nadu earned a Geographical Indication](#)

- [\(GI\) tag.](#)
- [Nobel Prize of Asia](#)
  - [Y20 Pre Summit Meeting under G20 hosted by Ministry of Youth Affairs and Sports begins with an excursion trip for delegates](#)
  - [WHO launches initiative to make world better prepared for future pandemics](#)
  - [Call to protect historically significant structures at Thirunelly temple](#)
  - [Dima Hasao insurgent group signs peace pact with Assam, Centre](#)
  - [A seed festival aims to help tribal Kondh farmers in Odisha return to their agricultural traditions](#)

## FACTS FOR PRELIMS

- [PM Modi invited to France for Bastille Day parade](#)
- [Curious case of 'missing' areas in Pobitora sanctuary in Assam](#)
- [India US to sign Rs 2400 crore deal for missiles, torpedoes for Indian Navy](#)
- [Kamarajar Port to be able to handle cape size vessels in a few years](#)
- [World Energy Transitions Outlook 2022](#)
- [Goa to release rescued black panther in Netravali Wildlife Sanctuary](#)
- [US details new \\$2.6 bn military aid package for Ukraine](#)
- [Sikkim Avalanche Highlights: 7 dead, at least 150 trapped at Nathu La; no respite from snow soon](#)
- [India to step up support for Bhutan's five-year plan, work for expediting rail link project](#)
- [Indigenous Idu Mishmis are protesting a proposed tiger reserve in Arunachal Pradesh](#)
- [Hubble Telescope Finds Double Quasar in Early Universe](#)
- [What is the UN Water Conference and why is it so important?](#)
- [Landslide hits Subansiri Dam project](#)
- [Mission to map rural India's cultural assets covers over one lakh villages](#)
- [Int'l Trade Union Confederation calls WBG, IMF to overhaul multilateral system, act for sustainable recovery](#)
- [What was the U.N. water conference and what happened there?](#)
- [A Beginner's Guide To Spotting Flamingos In Mumbai](#)
- [UP's Suhelwa sanctuary records first photographic proof of tigers](#)
- [Krishnarajapuram and Whitefield railway stations to be revamped under Amrit Bharat Station scheme](#)
- [IAF to join multilateral exercise in Greece](#)
- [India conducts successful trial of BMD interceptor missile](#)
- [Insomnia linked to risk of heart attack, especially in women](#)

**POLITY**

**Society of Indian Law Firms raises concerns before BCI over entry of foreign lawyers**

Bar Council of India (BCI)

- It is a **statutory body** established under the **Advocates Act 1961** to **regulate and represent the Indian bar**.
- **Functions:**
  - It performs the **regulatory function** by **prescribing standards of professional conduct** and etiquette and by exercising **disciplinary jurisdiction over the bar**.
  - It also **sets standards for legal education** and **grants recognition to Universities** whose degrees in law will serve as qualification for enrolment as an advocate.
  - It **conducts the All India Bar Examination (AIBE)** to grant a 'Certificate of Practice' to advocates practising law in India.
  - BCI **also funds welfare schemes** for economically weaker and physically handicapped **advocates**.

**CERT-in may be exempted from giving information under RTI Act**

Computer Emergency Response Team (CERT-in):

- CERT-In is a **functional organisation of the Ministry of Information & Electronics Technology**.
- It is the **national nodal agency for responding to computer security incidents** as and when they occur.
- **Objective: Securing Indian cyberspace.**
- CERT-In has been **operational since January 2004**.
- **Functions:**
  - **Collection**, analysis and dissemination **of information on cyber incidents**;
  - **Forecast and alerts** of cyber security incidents;
  - **Emergency measures** for handling cyber security incidents;
  - **Coordination** of cyber incident response activities;
  - **Issue guidelines, advisories**, vulnerability notes and whitepapers relating to information security practices, procedures, prevention, response and reporting of cyber incidents;

**Odisha CM disburses Rs 877 crore KALIA assistance to 43 lakh farmers in state**

KALIA Scheme:

- It was launched by the **Odisha Government** in December 2018, **to reduce poverty**



**and accelerate agricultural prosperity.**

- The KALIA scheme **supports cultivators, small farmers and landless agricultural labourers.**
- It provides **payments to farmers to encourage cultivation and associated activities.**
- **Benefits:**

➤ **Assistance for cultivation:**

- It gives financial assistance of **Rs.25,000 for a farm family (small and marginal farmers) over five seasons to purchase inputs like fertilisers, seeds and pesticides.**
- The farm family can also use the financial assistance towards labour and other investments.

➤ **Assistance for livelihood:**

- The assistance for livelihood provides **financial assistance of Rs.12,500 to all landless agricultural households for allied agricultural activities** like mini-layer units, small goat rearing units, duckery units, mushroom cultivation, fishery kits for fisherman and bee-keeping, etc.

➤ **Assistance for vulnerable agricultural household:**

- The vulnerable cultivators or landless agricultural labourers will get financial assistance of **Rs.10,000 per family every year to enable them to take care of their sustenance.**

➤ **Life insurance for cultivators and landless agricultural labourers:**

- It provides a **life insurance cover of Rs.2 lakh** to cultivators and landless agricultural labourers between 18-50 years.
- It also provides a **personal accident cover of Rs.2 lakh.**

➤ **Interest-free crop loan:**

- The KALIA scheme will provide **crop loans up to Rs.50,000 at 0% interest** for the vulnerable landless labourers, sharecroppers, cultivators, and agricultural families identified by Gram Panchayats.

## **Regulator pulls up companies, auditors for flouting Ind As norms**

National Financial Reporting Authority (NFRA):

- The NFRA was **constituted on 01st October 2018**, by the Government of India **under the Companies Act, 2013.**
- It is an **independent regulator to oversee the auditing profession and accounting**

- standards** in India.
- **Objective:** To continuously improve the quality of all corporate financial reporting in India.
  - **Functions and Duties:**
    - **Recommend accounting and auditing policies and standards** to be adopted by companies for approval by the Central Government;
    - **Monitor and enforce compliance** with accounting standards and auditing standards;
    - **Oversee the quality of service of the professions** associated with ensuring compliance with such standards and suggest measures for improvement in the quality of service;
  - **Composition:** It consists of a **chairperson**, who shall be a person of eminence and having expertise in accountancy, auditing, finance, or law to be appointed by the Central Government and **such other members not exceeding fifteen consisting of part-time and full-time members.**
  - **Powers:**
    - NFRA have the **power to investigate, either suo moto or on a reference** made to it by the Central Government **into the matters of professional or other misconduct committed by any member or firm of chartered accountants** registered under the Chartered Accountants Act, 1949.
    - It has the **same powers as are vested in a civil court** under the Code of Civil Procedure, 1908 while trying a suit.
  - **HQ: New Delhi**

### Parliamentary panel asks CAT to dispose of cases pending for over 10 years on priority basis.

- The Central Administrative Tribunal (CAT) had been **established under Article 323-A** of the Constitution.
- **Mandate:** To **adjudicate disputes and complaints with respect to recruitment and conditions of service** of persons appointed to public services and posts **in connection with the affairs of the Union** or other authorities **under the control of the Government.**
- In addition to the Ministries and Departments of Central Government, the **Government has notified about 214 organizations** under section 14 (2) of the Administrative Tribunals Act, 1985, to **bring them within the jurisdiction of the CAT** from time to time.
- There are **17 Benches and 21 Circuit Benches** in the CAT all over India.
- **Composition:** A bench consists of **one Judicial Member** and **one Administrative Member.**
- The **conditions of service of the Chairman and Members** of CAT are the **same as** applicable to a **Judge of High Court.**
- **Salaries, Allowances and Conditions** of Service **of the officers** and other employees of the Tribunal **are specified by the Central Government.**
- **Powers:**
  - It exercises **jurisdiction only in relation to the service matters** of the parties covered by the Administrative Tribunals Act 1985.

- The Tribunal is **guided by the principles of natural justice** in deciding cases and is not bound by the procedure prescribed by the Civil Procedure Code.
- CAT is **empowered to frame its own rules of procedure and practice**.
- It has been **conferred with the power to exercise the same jurisdiction and authority in respect of contempt of itself as a High Court**.

### Sale of Electoral Bonds at Authorized Branches of State Bank of India (SBI)

Electoral Bonds:

- The electoral bond scheme was **launched** by the Union government in **2018**.
- **What is it?** It is a **bearer instrument**, like a promissory note that **can be bought by any Indian citizen or company incorporated in India**.
- The citizen or corporate can **then donate the same to any eligible political party** of his/her choice.
- The bonds are **similar to bank notes that are payable to the bearer on demand and are free of interest**.
- An individual or party is **allowed to purchase these bonds digitally or through cheque**.
- **Working:**
  - EBs are **issued/purchased** for any value, in **multiples of Rs 1,000, Rs 10,000, Rs 1,00,000, Rs 10,00,000 and Rs 1,00,00,000**.
  - The electoral bonds **are available for purchase for 10 days at the beginning of every quarter**.
  - **SBI is the only bank** authorized to sell these bonds.
  - Anonymous **cash donations were capped at Rs 2,000**.
  - EBs have a **life of only 15 days** during which it can be used for making donations to political parties.
  - **Eligibility: Only political parties registered under Section 29A of the Representation of the People Act, 1951 and which secured not less than 1% of votes polled** in the last general election to the House of the People or the Legislative Assembly of the State, are eligible to receive electoral bonds.
  - The bond **can be encashed by an eligible political party only through a designated bank account** with the authorized bank.
  - The **political parties have to disclose the amount to the Election Commission**.
  - The electoral bonds **will not bear the name of the donor**.

### Anushka Sharma is liable to pay tax as she owned copyright on her stage performances: Sales Tax dept tells HC

Performer's rights:

- Performers' rights refer to the **legal rights** granted to actors, singers, musicians, dancers, and other performers for their creative works.

- The first significant development in the protection of performers' rights came with the adoption of **the Rome Convention in 1961**.
- Performers' rights are protected under various international treaties such as the **Rome Convention for the Protection of Performers** and the **WIPO Performances and Phonograms Treaty**.
- In 1996, WIPO Performance and phonogram Treaty (WPPT) came into existence.
- In this treaty\*\*, the moral rights of the performers were recognized\*\* for the first time in any international treaty.
- In **India**, performer rights were recognised under **the Copyright Act of 1957** in the year 1994.
- The copyright Act is also in conformity with 2 WIPO internet treaties concluded in 1996 namely, the **WIPO Copyright Treaty (WCT)** and **WIPO Performances and Phonograms Treaty (WPPT)**.
- The duration of the protection of the **performer's rights is 50 years** from the end of the year in which the performance was fixed or it took place.

### Copyrights

- A **legal right** granted to an intellectual property owner is copyright.
- It helps protect the creator of the original material so that no one can duplicate or use it without authorization.

### World Intellectual Property Organisation

- It is an organisation based in Geneva and it works with the vision of encouraging creative activity and promoting the protection of Intellectual Property throughout the world.
- WIPO is one of the 15 **specialised agencies** of the **United Nations**.
- Currently, there are 193 members of the World Intellectual Property Organisation.

### Lokpal disposed of 68% corruption complaints against public servants without any action: Parliamentary panel report

- The Lokpal is a **statutory body** established under the **Lokpal and Lokayuktas Act 2013**.
- **Mandate:** To **inquire into allegations of corruption against** certain **public functionaries** and for related matters.
- **Organisational Structure:**
  - The Lokpal will consist of a **chairperson and a maximum of eight members**.
  - **Chairperson should be** either the **former Chief Justice of India** Or the **former Judge of the Supreme Court**, or an eminent person who fulfils eligibility criteria as specified.
  - Out of the maximum eight members, **half will be judicial members**. The judicial member of the Lokpal should be either a former Judge of the Supreme Court or a former Chief Justice of a High Court.
  - **Minimum fifty per cent** of the Members **will be from SC / ST / OBC / Minorities and women**.

- **How are members appointed?**
  - The Chairperson and the Members are **appointed by the President** of India **on the recommendation of a selection** committee composed of the **Prime Minister** as the Chairperson, the **Speaker of Lok Sabha**, the **Leader of Opposition in Lok Sabha**, the **Chief Justice of India** or a Judge nominated by him/her, and **One eminent jurist**.
  - They hold office for a **term of five years** from the date on which they enter upon the office **or until they attain the age of 70 years**, whichever is earlier.
  - **The salary, allowances** and other conditions of services **of the Chairperson** are the **same as that of the Chief Justice of India**.
  - **The salary, allowances** and other conditions of services **of the Members** are the **same** as that of a **Judge of the Supreme Court**.
- **Jurisdiction:**
  - It has jurisdiction to inquire into allegations of corruption against anyone who is or has been **Prime Minister**, or a **Minister** in the Union government, or a **Member of Parliament**, as well as **officials of the Union Government under Groups A, B, C and D**.
  - It covers **chairpersons, members, officers** and **directors of any board, corporation**, society, trust or autonomous body either **established by an Act of Parliament** or wholly or partly funded by the Union or State government.
  - It also **covers any society or trust** or body that **receives foreign contribution above Rs 10 lakh**.
- **Exceptions for Prime Minister:**
  - Lokpal **cannot inquire allegations against the PM relating to international relations**, external and internal security, public order, atomic energy and space.
  - Also, complaints against the PM are **not to be probed unless the full Lokpal bench considers the initiation of inquiry** and **at least 2/3rds of the members approve it**.
- **Powers of Lokpal:**
  - It has powers to **superintendence over and to give direction to CBI**.
  - If it has referred a case to CBI, the **investigating officer** in such case **cannot be transferred without the approval of Lokpal**.
  - Powers to authorize CBI for search and seizure operations connected to such cases.
  - **The Inquiry Wing** of the Lokpal has been **vested with the powers of a civil court**.
  - Lokpal has **powers of confiscation of assets**, proceeds, receipts and benefits arisen or procured by means of corruption in special circumstances.
  - Lokpal has the **power to recommend the transfer or suspension of public servants** connected with the allegation of corruption.
  - Lokpal has the power to **give directions to prevent the destruction of records** during the preliminary inquiry

**Himachal Pradesh considering legalising cannabis cultivation, says CM Sukhvinder Singh Sukhu**

- Cannabis refers to a group of three plants with psychoactive properties, known as **Cannabis sativa, Cannabis indica, and Cannabis ruderalis.**
- Cannabis is made up of more than 120 components, which are known as cannabinoids but experts have a pretty good understanding of two of them, known as **cannabidiol (CBD) and tetrahydrocannabinol (THC).**
- The Mexican term 'marijuana' is frequently used in referring to cannabis leaves or other crude plant material in many countries.
- The unpollinated female plants are called hashish. Cannabis oil (hashish oil) is a concentrate of cannabinoids obtained by solvent extraction of the crude plant material or of the resin.
- In India farming of cannabis has **been legalised in Uttarakhand**, and controlled cultivation of cannabis is also being done in some districts of Gujarat, Madhya Pradesh and Uttar Pradesh.

#### Legal Provisions in India

- The central law that deals with cannabis (weed or marijuana) in India is the **Narcotic Drugs and Psychotropic Substances Act, of 1985.**
- The NDPS Act prohibits the sale and production of cannabis resin and flowers, but the use of leaves and seeds of the cannabis plant is permitted
- The **states have the power** to regulate and **form the state rules** for it.

#### Election Commission grants national party status to AAP

- The Election Commission has **recognised the Aam Aadmi Party (AAP)** as a national party and **withdrew** the national party status of the **All India Trinamool Congress, Nationalist Congress Party (NCP) and the Communist Party of India (CPI).**
- The EC has also **removed state party status** granted to Rashtriya Lok Dal (RLD) in Uttar Pradesh, Bharat Rashtra Samiti (BRS) in Andhra Pradesh, People's Democratic Alliance in Manipur, Pattali Makkal Katchi in Puducherry, Revolutionary Socialist Party in West Bengal and Mizoram People's Conference in Mizoram.
- Now the country has **five national parties** Bahujan Samaj Party, Bhartiya Janta Party (BJP), Communist Party of India (Marxist), Congress and Aam Aadmi Party (AAP).

#### National Party Status:

- According to the Election Commission, any of these **three conditions** need to be met if a party is to be called a "national party".
  - A party's candidates in a **minimum of four states** must get at **least 6 per cent** of the total votes polled in each of those states in the last national election. In addition to this, it should have won **four seats in the Lok Sabha.**
  - A party should win **a minimum of 2 per cent of the total seats in the Lok Sabha.** The party's candidates should have been elected from **not less than three states.**
  - A party is recognised as a **"state party" in at least four states.**

## Amit Shah launches vibrant villages program on China border in Arunachal Pradesh

Vibrant Village Programme:

- It is a Centrally Sponsored Scheme implemented over **financial Years 2022-23 to 2025-26**.
- The programme will provide funds for **development of essential infrastructure and creation of livelihood opportunities** in 19 Districts and 46 Border blocks of 4 states and 1 UT along the northern land border of the country - **Arunachal Pradesh, Sikkim, Uttarakhand, Himachal Pradesh and UT of Ladakh**.
- The programme will help in improving the quality of life of people living in identified border villages and encourage people to stay in their native locations thereby **reversing the outmigration from these villages** and adding to security of the border.
- Focus Areas: **Road connectivity, drinking water, electricity including solar and wind energy**, mobile and internet connectivity and healthcare infrastructure and wellness centers etc.
- Vibrant Village Action Plans will be created by the **district administration with the help of Gram Panchayats** and 100 % saturation of Central and state schemes will be ensured.
- There will **not be overlap with Border Area Development Programme**.

## In New Delhi, George Soros is old, dangerous and on a watchlist — at UN, he isn't a problem

UN Democracy Fund:

- It was created by the former **UN Secretary-General Kofi Annan in 2005** as a United Nations General Trust Fund to support democratization efforts around the world.
- It is used to empower civil society, promote human rights, and encourage the participation of all groups in democratic processes.
- **India** is a founding member of UNDEF.
- **Funding:** It subsists entirely on **voluntary contributions** from Governments
- **Advisory Board:** It is constituted by the Secretary-General and includes
  - UN Member States who have made the **largest cumulative financial contributions** to the Fund over the previous **three years**.
  - International civil society organizations
  - Individuals serving in a personal capacity

## Union Minister of Power and New & Renewable Energy released the report of the State Energy Efficiency Index (SEEI) 2021-22 in New Delhi.

- It is developed by the **Bureau of Energy Efficiency (BEE)** in association with **Alliance for an Energy-Efficient Economy (AEEE)**.
- SEEI 2021-22 has an updated framework of **50 indicators** aligned with national

priorities. Programme-specific indicators have been included this year to track outcomes and impacts of state-level energy efficiency initiatives.

- 5 states - Andhra Pradesh, Karnataka, Kerala, Rajasthan and Telangana - are in the **Front Runner category** (>60 points)
- 4 states - Assam, Haryana, Maharashtra, and Punjab - are in the **Achiever category** (50-60 points).
- Further, Karnataka, Andhra Pradesh, Assam and Chandigarh are the top-performing states in their respective state groups.
- Telangana and Andhra Pradesh showed the most improvement since the last index.

#### Bureau of Energy Efficiency

- It was set up on 1st March 2002 under the provisions of **the Energy Conservation Act, 2001**.
- **Objective:** The primary objective of reducing the energy intensity of the Indian economy.
- It coordinates with designated consumers, designated agencies and other organizations and recognises, identifies and utilises the existing resources and infrastructure, in performing the functions assigned to it under the Energy Conservation Act.

#### National Credit Framework to be internationally recognised through bilateral agreements: UGC chairman

- It is an **umbrella framework** for skilling, re-skilling, up-skilling, accreditation & evaluation encompassing our people in educational & skilling institutions and workforce.
- The framework was **developed by a high-level committee**, including members from the **UGC, AICTE**, National Council for Vocational Education and Training, **NCERT, CBSE** and other educational departments.

#### Credit Framework work

- Every academic assessment right from **elementary school level to higher education** as well as for **vocational training and skill development courses** acquired can be credited and accumulated in the **Academic Bank of Credit (ABC)**.
- As per the framework, even experiential learning including relevant experiences and proficiency/ professional levels and online, digital and blended learning will be credited.
- Nothing is left unmeasured, as **outside of classroom learning, sports and games, yoga**, physical activities, performing arts, handicrafts, bag less days will also be part of it.
- The framework has divided the **learning ecosystem into eight level**, assigning credits based on learning hours and assessments **from Class 5 all the way up to PhD level**.
- Till Class 12, each subject is assigned 240 hours for self- -study at the school level.
- Vocational education and skill training from level 1 to 8 are also part of the framework.



- As per this system the **final certificate/ degree** will be awarded post the accumulation of the required number of and types of courses and the associated credits.
- At any point of time, the overall credit points accumulated by a student shall be calculated as '**total credit points earned**' multiplied by the '**weightage assigned to the relevant experience acquired by the student**'.
- **Significance:**
  - It empowers the students with flexibility in choice of courses and imaginative and flexible curricular structures with creative combination of disciplines.

### ICSI to rope in experts, regulatory members on secretarial and auditing standards board

Institute of Company Secretaries of India:

- It is the only recognized **professional body** in India to develop and regulate the profession of Company Secretaries in India.
- It is a premier national professional body set up under an act of Parliament, the **Company Secretaries Act, 1980**.
- **Nodal Ministry:** Ministry of Corporate Affairs, Government of India.
- The Institute provides top-quality education to the students of Company Secretaries (CS) Course and best quality set standards to CS Members.
- At present, there are more than 65,000 members and around 2.5 Lakh students in the role of ICSI.
- **Headquarters:** New Delhi and has four Regional Offices in New Delhi, Chennai, Kolkata, and Mumbai and 72 Chapters across India.
- ICSI has been contributing to the initiatives of the Government of India that have the potential to excel in the social-economic growth of India.

### Preventive detention laws colonial legacy, must be used only in rarest of rare cases: Supreme Court

- Detention in its simplest sense means to curb the liberty of an individual i.e. without the knowledge of that individual.
- There are 2 types of Detention
  - Preventive Detention
  - Punitive Detention

Constitutional Provisions

- **Article 22:** This article under the Indian Constitution protects against arrest and detention in certain cases.
- **Article 22 (1)** of the Indian Constitution says an **arrested person** cannot be **denied the right to consult**, and to be defended by, a legal practitioner of his choice.
- It allows for preventive detention and restriction on personal liberty for reasons of state security and public order.

- **Article 22 (4)** states that no law providing for preventive detention shall authorise the detention of a person for a longer period than three months unless
  - An **Advisory Board reports** sufficient cause for extended detention.
  - Such a person is detained in accordance with the provisions of any law made by the Parliament.
  - The **44th Amendment Act of 1978** has reduced the period of detention without obtaining the opinion of an advisory board from three to two months. However, this provision has not yet been brought into force, hence, the original period of three months continues.
- **Under Entry 9 of List I ( the Union List)**, Parliament has the **exclusive power** to enact a law for preventive detention for the reasons connected with **defence, foreign affairs, or security of India.**
- **Under Entry 3 of List III ('Concurrent List')**, **both Parliament and State Legislature** have powers to enact such laws for the reasons related to the maintenance of public order or the maintenance of supplies or services essential to the community.
- **Legal Provisions:**
  - The **Preventive Detention Act, of 1950** talks about the detention of a person on the grounds of defence, foreign affairs or the security of the state.
  - **Under Section 151 of the Criminal Procedure Code, 1973 (CrPC)** preventive detention is police action taken on grounds of suspicion that some wrong actions may be done by the person concerned.
  - A **police officer** can arrest **an individual without orders from a Magistrate** and any warrant if he gets any information that such an individual can commit any offence.
  - It is a **precautionary measure** and based on suspicion.

#### Punitive Detention

- Punitive detention is detention as punishment for the crime committed by an It takes place after the actual commission of an offence or at least after an attempt has been made.

#### Centre tightens fund flow rulebook for CSS schemes

- States have been asked to ensure that their share of funds is transferred to the **Single Nodal Agency (SNA)** for the CSS scheme within 30 days of receiving central funding instead of 40 days, as allowed earlier.
- Any delay beyond 30 days would attract a **'penal interest' of 7% per annum.**
- This 'penal interest' by a state that delays prescribed fund flow will be transferred to the Consolidated Fund of India.

#### centrally sponsored scheme

- These are schemes that are **funded partially by both the Central and State Governments.**
- It is a channel which the central government uses to help the states run their plans financially.

- The amount of state participation varies from state to state.
- Their **implementation** rests on the **Union territories and the States**.
- These schemes are further divided into three categories based on their funding patterns e. the **core of the core, core and optional**.
  - The **flagship schemes** of the central government are called **Core of Core** schemes or umbrella schemes.
  - **Examples:** Mahatma Gandhi National Rural Employment Guarantee Programme (MGNREGA), National Social Assistance Programme etc.
  - **Core schemes:** The funding pattern is **usually 60:40**. The central government takes up more share in these schemes and the states are expected to pitch in the remaining funds.
  - Although, in cases of difficulty where states like North Eastern states, Jammu & Kashmir, and some special category states need extra attention, a 90:10 ratio of funding can be seen usually.
  - **Examples:** Pradhan Mantri Gram Sadak Yojana (PMGSY), Pradhan Mantri Awas Yojana (PMAY), Integrated Watershed Development Programme etc.
  - **Optional schemes:** Normally **state governments plan the schemes** and request the central government to fund some portion of the total outlay. The general funding pattern of the optional **schemes is 50:50 (State: Center)**.
  - However, the Central government may take up the task of funding more if the scheme is to be implemented in backward areas or difficult terrains.
  - **Examples:** Border Area Development Programme, and Shyama Prasad Mukherjee Rurban Mission among others.

### 35.7 lakh vacancies registered on National Career Service (NCS) in year 2022-23

National Career Service portal:

- National Career Service is one of the **mission-mode projects** under the umbrella of the **E-Governance Plan**.
- It was launched in the year 2015.
- **Objectives:** It works towards **bridging the gap between job-seekers and employers**, candidates seeking training and career guidance and agencies providing training and career counselling by transforming the National Employment Service.
- It provides a host of **career-related services** such as dynamic job matching, career counselling, job notifications, vocational guidance, and information on skill development courses, internships and alike.
- The focus areas for the National Career Service platform are listed below:
  - Enhancing **Career and employment** opportunities
  - **Counselling and guidance** for career development
  - Focusing on decent employment
  - Enhancing female labour force participation
  - Encouraging entrepreneurial endeavours
- **Nodal Agency:** The project is being implemented by the **Directorate General of Employment**, Ministry of Labour & Employment.

### SC judge recuses from hearing Belagavi border dispute case

- It is an **interstate dispute between Karnataka and Maharashtra over the control of Belagavi**, a border town in Karnataka.
- **History:**
  - It has its **roots in the State Reorganization Act of 1956**, which aimed at reorganizing the states along linguistic lines.
  - **At the time of India's independence, Belagavi was part of the Bombay state** that had included parts of present-day Karnataka.
  - **After the implementation of the Act, Belagavi (previously Belgaum) became a part of Karnataka.**
  - On May 1, 1960, Maharashtra claimed that 865 villages, including Belagavi, Carvar and Nipani, should be part of Maharashtra and not Karnataka.
  - However, Karnataka said it will not part with any part of its territory.
- **Mahajan Commission:**
  - **It was set up** by the Union government on **October 25, 1966**, to solve the dispute.
  - The **panel turned down Maharashtra's claim over Belagavi** and also recommended that 247 villages/places, including Jatt, Akkalkote and Solapur, be made part of Karnataka, and 264 villages /places, including Nippani, Khanapur and Nandagad, to be in Maharashtra.
  - However, the **commission's report was outrightly rejected by Maharashtra**. Meanwhile, Karnataka saw the commission ruling in its favour.
- **Present Status:**
- The **Maharashtra government filed a plea in the Supreme Court** challenging the State Reorganisation Act, 1956, in 2004. It demanded 865 villages and places from five Karnataka districts to be merged with the state.
- Meanwhile, **Karnataka changed the name of Belgaum to Belagavi** and made it the second capital of the state.
- The issue has been **pending before the Supreme Court since 2004**.
- **Karnataka contends that only Parliament can decide the state borders** and not the Supreme Court. It cites Article 3 of the Indian Constitution while doing so.
- On the other hand, **Maharashtra cites Article 131** and claims the apex court has jurisdiction in cases of disputes in which the Union government and the states are involved.

### SC dismisses two pleas challenging Delhi HC verdict on Agnipath scheme

- While dismissing the petitions, **the Supreme Court bench also rejected the argument that the 'doctrine of promissory estoppel' would apply** and said that the decision to not proceed with the previous recruitment processes could not be termed as arbitrary.
- It observed that **promissory estoppel will not apply when a larger public interest is involved**.

'doctrine of promissory estoppel'

- It is a **doctrine in contract law which enforces a promise** whether executed as a contract or not.
- The doctrine **seeks to protect the rights of a promisee or aggrieved party against the promisor.**
- **When is the doctrine applied?**
  - A **valid contract under law requires an agreement to be made** with sufficient consideration.
  - The doctrine **applies when the promisor has made a promise to the promisee.**
  - The **promisee must have relied on the promise and suffered a loss** due to the non-performance of the contract.
  - The doctrine **prevents the promisor or enterprise from going back on its word** or promise.
  - The doctrine **enables the injured party or the promisee to recover on a promise.**
- **Example:**
  - A **vendor makes an oral promise to the customer to replace the goods** if they do not fit the customer's size requirements.
  - The **customer purchases** the clothes and takes them home.
  - However, **the customer proposes to return the clothes** to the vendor relying on the vendor's oral promise.
  - Here, **the vendor is estopped from refusing the clothes returned.**
- Thus, this **doctrine seeks to enforce a promise** made under a contract, **whether oral or in writing.**
- The doctrine **varies from country to country.**
- In a **1981 decision in Chhaganlal Keshavalal Mehta v. Patel Narandas Haribhai**, the **SC lists a checklist** for when the doctrine can be applied.
  - First, **there must be a clear and unambiguous promise.**
  - Second, the **plaintiff must have acted relying reasonably on that promise.**
  - Third, the **plaintiff must have suffered a loss.**

### Retired district judge among 12 picked by SC collegium for post of HC judge

- The appointment of ad-hoc judges has been provided in the Constitution under **Article 224A** (appointment of retired Judges at sittings of High Courts).
- Under this Article, the Chief Justice of a High Court for any State can request a person to act as a judge of the High Court.
- For this, the **prior consent of the president** is required.
- The person should have held the office of judge of that court or of any other High Court.
- Such a judge is entitled to **allowances as determined by the President.**
- He will also enjoy all the jurisdiction, powers and privileges of a judge of that high court.

Chief Justice of a High Court may start the procedure of recommending a name if

- The number of **vacancies is more than 20% of** the sanctioned strength.
- Cases in a particular class are pending **for over five years**.
- More than **10 % of pending cases** are over five years old.
- Percentage of the rate of disposal is beneath the institution of the cases either in a particular subject matter or in the court.

### India's tallest Ambedkar statue set for inauguration today

- **Location:** On the **banks of Hussainsagar** near the new Secretariat complex in **Hyderabad**.
- It is claimed to be the **tallest statue in the country** ever built for **Dr B R Ambedkar**.
- **Height:** It has an overall **height of 175 feet**, including a **50 feet high circular base** resembling the edifice of the Parliament of India.
- The statue weighs **474 tonnes**.
- **Materials used:**
  - **360 tonnes of stainless steel** was used for building the armature structure of the statue.
  - **114 tonnes of bronze** was used for the casting of the statue.
- **Designers:** It was designed by renowned sculptors **Ram Vanji Sutar and his son Anil Ram Sutar** of Ram Sutar Art Creations in Noida, Uttar Pradesh, **who also designed several monumental sculptures, including the world's tallest statue — the Statue of Unity (597 feet) of Sardar Vallabhbhai Patel** in Gujarat.

Dr B R Ambedkar:

- He was an **Indian jurist, economist, politician and social reformer**.
- **Name: Bhimrao Ramji Ambedkar** is popularly known as Babasaheb, meaning "**respected father**" in Marathi and Hindi.
- Ambedkar was **born into a poor low Mahar (dalit) caste**, who were **treated as untouchables** and subjected to socio-economic discrimination.
- He **campaigns against social discrimination** towards the untouchables.
- **In 1930, Ambedkar launched the Kalaram Temple movement** to enter Kalaram Temple.
- **Poona Pact:** It was an agreement made **in 1932 between Ambedkar and Mahatma Gandhi on the reservation of electoral seats for the depressed classes**.
- **Architect of Constitution:**
  - He was the architect of the Constitution of India by **serving as the Chairman of the Constitution Drafting Committee**.
  - He was **independent India's first law and justice minister**.
- **In 1956, he converted to Buddhism** initiating mass conversions of Dalits.
- **In 1990, the Bharat Ratna was posthumously conferred** upon Ambedkar.
- In honour of Ambedkar, Indian **Constitution Day (National Law Day) is celebrated on 26 November**.
- **Political parties/groups formed by him:**
  - **Depressed Classes Federation (DCF)** in 1930

- **Independent Labour Party (ILP)** in 1936
- **Scheduled Castes Federation (SCF)** in 1942
- **Key Literary works:**
  - **Annihilation of Caste**
  - **Rande, Gandhi and Jinnah**
  - **Castes in India: Their Mechanism, Genesis and Development**
  - **The Buddha and His Dhamma**
  - **Waiting for a Visa**

### **Demand for same-sex marriage's recognition is 'urban elitist view': Centre**

- The Centre told the Supreme Court on Monday that the demand for legal recognition of same-sex marriage is merely a voicing of "urban elitist views" for the purpose of social acceptance.
- The court should not try judicially to create a "new social institution" by endorsing same-sex marriages. The judges should leave the task to Parliament, the people would decide whether such a "marriage of a different kind" is socially and religiously acceptable or not, the Centre said
- "Creation or recognition of a new social institution cannot be claimed as a matter of right/choice, much less a fundamental right," the Centre said. The right to personal autonomy does not include a right for the recognition of same-sex marriage.
- The court would adjudicate solely on the basis of petitions containing "elitist views", while the legislature, on the other hand, would take into consideration broader views and voices of the rural, semi-rural and urban population, the religious denominations, personal laws and customs and effect of same-sex unions on other laws governing marriage. The existing concept of marriage as a heterogenous institution has the sanctity of law and religion, the Centre said.
- Centre said fundamental rights such as the right to choose one's sexual orientation as well as the right to privacy have already been protected under the Transgender Persons (Protection of Rights) Act, 2019. "Any further creation of rights, recognition of relationship and giving legal sanctity to such relationships can be done only by the competent legislature and not by judicial adjudication,"

### Arguments in favor of same-sex marriage

- **Equal Rights and Protection Under the Law:** All individuals, regardless of their sexual orientation, have the right to marry and form a family.
  - Same-sex couples should have the **same legal rights** and protections as opposite-sex couples.
  - Non-recognition of same-sex marriage **amounted to discrimination that struck at the root of the dignity** and self-fulfillment of **LBTQIA+ couples**.
- **Strengthening Families and Communities:** Marriage provides social and economic benefits to couples and their families. Allowing same-sex couples to marry **strengthens families and communities by promoting stability and security**.
- **Global Acceptance:** Same-sex marriage is legal in many countries around the world, and denying this right to individuals in a democratic society goes **against the global principles**.

- In 133 countries homosexuality decriminalised, but only in **34 of them same-sex marriage is legal.**
- **Countries legalised same sex marriage:** Andorra, Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Denmark, Ecuador, Finland, France, Germany, Iceland, Ireland, Luxembourg, Malta, Mexico, the Netherlands, New Zealand, Norway, Portugal, Slovenia, South Africa, Spain, Sweden, Switzerland, Taiwan, the United Kingdom, the United States of America and Uruguay.

### Chhattisgarh CM writes to PM seeking inclusion of higher quota Bills in Ninth Schedule

- Chhattisgarh Chief Minister Bhupesh Baghel on Monday wrote to Prime Minister Narendra Modi seeking the inclusion of two amendment Bills allowing for higher quota in jobs and educational institutions, in the Ninth Schedule of the Constitution.
- The two amendment Bills — that pave the way for a 76% quota for Scheduled Castes, Scheduled Tribes and Other Backward Classes — were passed unanimously by the Assembly, but are yet to receive a nod by the Governor.
- Mr. Baghel, in his letter, presented the demographics of the State and wrote that the “socio-economic and educational condition of the OBC people of the State is as weak as that of the SC/ST people. Three-fourths of these classes are farmers, marginal and small farmers and a large number of them are agricultural labourers”.

### High Court ruling

- The Chhattisgarh High Court struck down a 2013 State government order to allow a 58% quota, holding that reservation above the 50% ceiling was “unconstitutional”, followed by the passage of the Chhattisgarh Public Service (Scheduled Castes, Scheduled Tribes and Other Backward Classes Reservation) Amendment Bill and the Chhattisgarh Educational Institutions (Reservation in admission) Amendment Bill.
- The former Governor for refusing to sign the Bills was a Supreme Court ruling on capping the reservations at 50%.
- The stalemate between the government and the Raj Bhavan has continued over the past four months despite a change in guard. Chief Minister Baghel again urged Governor to either give his assent or return the Bills to the Assembly.

### Ninth Schedule

- The Schedule contains a list of **central and state laws which cannot be challenged in courts** and was added by the **Constitution (First Amendment) Act, 1951.**
  - The first Amendment added **13 laws to the Schedule.** Subsequent amendments in various years have taken the number of protected laws to 284 currently.
- It was created by the new Article 31B, which along with Article 31A was brought in by the government to protect laws related to **agrarian reform and for abolishing the Zamindari system.**
  - While Article 31A extends protection to ‘classes’ of laws, Article 31B shields **specific laws or enactments.**



- While most of the laws protected under the Schedule concern agriculture/land issues, the list includes other subjects.
- Article 31B also has a retrospective operation which means that if laws are inserted in the Ninth Schedule after they are declared unconstitutional, they are **considered to have been in the Schedule** since their commencement, and thus valid.
- Although Article 31B excludes judicial review, the apex court has said in the past that even laws under the Ninth Schedule would be **open to scrutiny if they violated Fundamental Rights or the basic structure of the Constitution.**

### Justice Joseph recuses from hearing plea against Goel's appointment as EC

- Supreme Court judge Justice K.M. Joseph on Monday recused from hearing a petition challenging the appointment of Arun Goel as the Election Commissioner.

### Election Commission of India (ECI)

- It is a **constitutional body** responsible for administering elections in India according to the rules and regulations mentioned in the Constitution of India.
- It was established on January 25, 1950.
- Its aim is to define and control the **process for elections conducted at various levels**: Parliament, State Legislatures, and the offices of the President and Vice President of India.
- The ECI implements **norms and the Model Code of Conduct (MCC)** to ensure **free and fair elections** in the country.

### Constitutional Provisions

- **Article 324**: Superintendence, direction and control of elections to be vested in an Election Commission.
- **Article 325**: No person to be ineligible for inclusion in, or to claim to be included in a special electoral roll on the ground of religion, race, caste or sex.
- **Article 326**: Elections to the Lok Sabha and Legislative Assemblies of States to be on the basis of adult suffrage.
- **Article 327**: Power of Parliament to make provision with respect to elections to legislature.
- **Article 328**: Power of Legislature of a State to make provision with respect to elections to such Legislature.
- **Article 329**: Bar to interference by courts in electoral matters.

### Appointment & Conditions of Service

- The **President of India** appoints the Chief Election Commissioner and Election Commissioners.
- They have tenure of **six years**, or up to the age of **65 years**, whichever is earlier.
- They enjoy the same status and receive salary and perks as available to **Judges of the Supreme Court** of India.

### Removal of Election Commissioners

- The Chief Election Commissioner (CEC) can be removed from office **only through impeachment** by Parliament.
- The CEC can be removed from office only through a process of removal similar to that of a **Supreme Court Judge** by Parliament.
- The President of India can remove the other officers on the **Chief Commissioner's recommendation**.
- They can **resign anytime** or can also be removed before the expiry of their term.

### CEC vs ECs

- Though the Chief Election Commissioner is the chairman of the election commission, his powers are equal to the other election commissioners. All the matters in the commission are decided by the majority amongst its members.
- The Chief Election Commissioner and the two other election commissioners receive equal salary, allowances and other benefits.

### India's population to edge ahead of China's by mid-2023, says UN

- India is set to overtake China to become the world's most populous country by the middle of 2023, according to data released by the United Nations. India's population is pegged to reach 142.86 crore against China's 142.57 crore. the data by the State of **World Population Report, 2023** of the **UN Population Fund (UNFPA)** showed. The world's population hit the 800-crore mark in November 2022.
- Population trends everywhere point to slower growth and ageing societies. Just eight countries will account for half the projected growth in global population by 2050 — the Democratic Republic of Congo, Egypt, Ethiopia, India, Nigeria, Pakistan, the Philippines and the United Republic of Tanzania — while two-thirds of people now live in a country where lifetime fertility corresponds with zero growth.
- At a time when there have been increasing calls for imposing a two-child norm in India by various political leaders, and some States such as Assam have issued an order in 2021 to bar those with more than two children from government jobs
- It called for a radical rethink on how countries address changing demographics and cautioned against use of family planning as a tool for achieving fertility targets. Global experience showed that family planning targets can lead to **gender-based discrimination** and harmful practices such as prenatal sex determination leading to sex-selective abortion, it says.
- Imposition of such targets can lead to imbalanced sex ratios, preferential health and nutrition for male children, denial of the paternity of girl children, violence against women for giving birth to girl children, and coercion of women to have fewer or greater numbers of children.

### India's way

- "With close to 50% of its population below the age of 25, India has a time-bound opportunity to benefit from the demographic dividend," and that it must convert this into

“economic benefits through additional investments in health, education, and quality jobs for young people — including targeted investments in women and girls.”

#### Demographic Dividend: Definition

- According to **United Nations Population Fund (UNFPA)**, demographic dividend means, "**the economic growth potential that can result from shifts in a population's age structure, mainly when the share of the working-age population (15 to 64) is larger than the non-working-age share of the population (14 and younger, and 65 and older)**".
- With fewer births each year, a country's working-age population grows larger relative to the young dependent population. With more people in the labor force and fewer children to support, a country has a window of opportunity for economic growth if the right social and economic investments and policies are made in health, education, governance, and the economy.

#### Demographic Dividend in India

- India has one of the **youngest populations** in an aging world. By 2020, the median age in India will be just 28, compared to 37 in China and the US, 45 in Western Europe, and 49 in Japan.
- Since 2018, India's working-age population (people between 15 and 64 years of age) has grown larger than the dependant population — children aged 14 or below as well as people above 65 years of age. This **bulge in the working-age population** is going to last till 2055, or 37 years from its beginning.
- This transition happens largely because of a **decrease in the total fertility rate** (TFR, which is the number of births per woman) after the increase in life expectancy gets stabilised.
- A study on demographic dividend in India by United Nations Population Fund (UNFPA) throws up two interesting facts.
  - The **window of demographic dividend opportunity** in India is available for five decades from 2005-06 to 2055-56, longer than any other country in the world.
  - This demographic dividend **window is available at different times in different states** because of differential behaviour of the population parameters.

#### SC Collegium recalls Orissa CJ's transfer proposal

The Supreme Court Collegium headed by Chief Justice of India D.Y. Chandrachud on Wednesday recalled its recommendation to transfer Orissa High Court Chief Justice, S. Muralidhar, as Chief Justice of the Madras High Court.

The decision comes after a nearly two-year wait for the government to respond. The Collegium had recommended Justice Muralidhar's transfer on September 28, 2022.

The Indian Constitution on the transfer of judges:

- **Article 222:** It provides for the transfer of HC judges, including the Chief Justice. The **President, after consultation with the CJI**, may transfer a judge from one HC to any other HC and a **compensatory allowance** is provided to the transferred judge.
- **Interpretation:** The executive could transfer a judge, but only after consulting the CJI.

The Supreme Court's view on the issue:

- The SC (in 1977) rejected the idea that HC judges can be transferred only with their consent, as the transfer powers can be exercised only in the **public interest**. Also, the President is under an obligation to consult the CJI.
- **In S.P. Gupta vs. President of India (1981)**, also known as the Judges Transfer Case/the First Judges Case, the SC ruled that the consultation with the CJI did not mean 'concurrence,' thus giving **primacy to the executive in the matter of appointments and transfers**.
- However, this position was overruled in the 'Second Judges Case' (1993)., formed after taking into account the views of senior-most judges\*\*, was to have primacy\*\*.

The opinion of the CJI

- Since then, appointments are being made by the **Collegium**.

The current procedure for transfers:

- The proposal for transferring a HC judge (including a Chief Justice) should be **initiated by the CJI** and the consent of the judge is not required. All transfers are to be made in the **public interest**.
- For transferring a judge other than the Chief Justice, the CJI should take the views of –
  - The Chief Justice of the court concerned, as well as the Chief Justice of the court to which the transfer is taking place.
  - **One or more SC judges**
- The views, expressed in writing, should be considered by a **full Collegium of five** – the CJI + 4 senior-most judges of the SC.
- The recommendation is sent to the Union Law Minister → the Prime Minister → the President.

### **FSSAI needs an energy shot to regulate processed food**

- The social media influencer drawn into the Cadbury's Bournvita controversy has a supporter. The Nutrition Advocacy in Public Interest — India (NAPi), a think tank working on nutrition policy, has issued a statement saying it stands by him.
- In January, the NAPi has filed a formal complaint with the Department of Consumers Affairs, working under the Ministry of Consumer Affairs, Food & Public Distribution. It

alleges the ads violate the provision of the Consumer Protection Act, 2019.

### Labelling on front

- The FSSAI has been discussing the possibility of front-of-pack labelling. According to this, brands would need to put a notification indicating if a food product was high in fat, sugar, and salt (**HFSS**). The labelling would allow consumers to make informed choices.
- In 2020, the FSSAI looked into 1,306 product samples across 30 food companies, including dairy, confectionery, sweets and snacks. None complied with its threshold for sugar to avoid warning labels — 6 g per 100 g.
- A panel then proposed increasing the threshold arbitrarily by six times. Despite that, only 20% of products were found to be meeting the new threshold — 36 g of sugar per 100 g. The rest had over 36 g of sugar.

### FSSAI

- Food Safety and Standards Authority of India (FSSAI) is an autonomous statutory body established under the Food Safety and Standards Act, 2006 (FSS Act).
- **Ministry of Health & Family Welfare**, Government of India is the administrative Ministry of FSSAI.
- **Headquarters:** Delhi.
- FSS Act, 2006 consolidates various acts & orders that had earlier handled food related issues in various Ministries and Departments, such as—
  - Prevention of Food Adulteration Act, 1954
  - Fruit Products Order, 1955
  - Meat Food Products Order, 1973
  - Vegetable Oil Products (Control) Order, 1947
  - Edible Oils Packaging (Regulation) Order 1988
  - Milk and Milk Products Order, 1992
- These were repealed after commencement of FSS Act, 2006.
- FSSAI was consequently established in 2008 but work within the Food Authority effectively began in 2011 after its Rules and key Regulations were notified.
- This marked a shift from a multi-level to a single line of control with focus on self-compliance rather than a pure regulatory regime.

### 7 Key Processes FSSAI

- Set standards of food products
- Develop safe food practices
- License food businesses
- Ensure compliance through inspections
- Test food for standards
- Train and build capacity
- Citizens Outreach

### FSSAI Legislative Framework

- Highlights of the Food Safety and Standard Act, 2006

- The Act aims to establish a single reference point for all matters relating to food safety and standards, by moving from multi- level, multi-departmental control to a single line of command.
- The Act established **FSSAI and the State Food Safety Authorities** for each State.
- Highlights of Food Safety and Standards Rule, 2011. The Rules provides for:
  - The **Food Safety Appellate Tribunal** and the Registrar of the Appellate Tribunal, for adjudication of food safety cases.

#### Structure of FSSAI

- The FSSAI comprises of a Chairperson and twenty two members out of which one – third are to be women.
- The Chairperson of FSSAI is appointed by the Central Government.
- The Food Authority is assisted by Scientific Committees and Panels in setting standards and the Central Advisory Committee in coordinating with enforcement agencies.
- The primary responsibility for enforcement is largely with the State Food Safety Commissioners.

#### Surat court rejects Rahul's plea for stay on conviction

Court rejects his contention that the trial was unfair; says complainant is an ex-Minister involved in public life and thus, the defamatory remarks would have certainly harmed his reputation

#### Defamation

- Defamation is the **act of communicating false statements about a person** that injure the reputation of that person.
- Any false and unprivileged statement published or spoken deliberately, intentionally, knowingly with the intention to **damage someone's reputation is defamation**.
  - History of defamation can be traced in Roman law and German law. Abusive chants were capital punishment in Roman.
- Defamation Law in India:
  - **Article 19 of the Constitution** grants freedom of speech to its citizens. However, Article 19(2) has imposed certain **reasonable exemptions to this freedom such as - Contempt of Court, defamation and incitement to an offense**.
  - In India, defamation can both be a civil wrong and a criminal offense, depending on the objective they seek to achieve.
    - **A Civil Wrong** sees a wrong being redressed with monetary compensation, while a criminal law seeks to punish a **wrongdoer and send a message to others not to commit** such acts, with a jail term.
    - In a Criminal Offense, defamation has to be **established beyond reasonable doubt** but in a civil defamation suit, damages can be awarded based on probabilities.

- **Free Speech v/s Defamation laws:**
  - It is argued that the defamation laws are a violation of **Fundamental Rights** guaranteed under **Article 19 of the constitution**.
    - The Supreme Court has ruled that the criminal provisions of defamation are **constitutionally valid and are not in conflict with the right to free speech**.
  - The SC has also held that it is valid to treat **defamation as a public wrong** and that criminal defamation is **not a disproportionate restriction on free speech**, because protection of **reputation is a fundamental right** as well as a human right.
  - The Court relied on the judgments of other countries and reaffirmed the right to reputation as a part of the **right to life under Article 21**.
    - Using the principle of 'balancing of fundamental rights', the court held that the right to freedom and speech and expression cannot be "allowed so much room that even reputation of an individual which is a constituent of Article 21 would have no entry into that area".

#### Previous Defamation Judgements

- **Mahendra Ram Vs. Harnandan Prasad (1958):** A letter written in Urdu was sent to the plaintiff. Therefore, he needed another person to read it to him. It was held that since the defendant knew the plaintiff does not know Urdu and he needs assistance, the act of the defendant **amounted to defamation**.
- **Ram Jethmalani Vs. Subramanian Swamy (2006):** The High Court of Delhi held Dr. Swamy for defaming Ram Jetmalani by saying that he **received money from a banned organization** to protect the then Chief Minister of Tamil Nadu from the case of assassination of Rajiv Gandhi.
- **Shreya Singhal Vs. Union of India (2015):** It is a landmark judgment regarding internet defamation. It held unconstitutional **Section 66A of the Information Technology Act, 2000**, which punishes for sending offensive messages through communication services.

#### Process

- The conviction may disqualify an MP if the offense for which he is convicted is listed in **Section 8(1) of the Representation of the People (RPA) Act of 1951**.
  - This section includes offences such as section 153A (offence of **promoting enmity between different groups** on ground of **religion, race, place of birth, residence, language, etc.**, and doing acts prejudicial to maintenance of harmony) or section 171E (offence of **bribery**) or section 171F (offence of undue **influence or personation** at an election) and a few others.
- **Section 8(3) of the RPA** mandates that an MP can be disqualified if convicted and sentenced to at least 2 years of imprisonment.
  - However, the section also states that the disqualification takes effect only "**after three months have elapsed**" from the date of conviction.
  - Within that period, the convicted MP can file an **appeal against the sentence before the High Court**.

## Houses unfinished, Bihar serves notices to 2.21 lakh beneficiaries of PMAY-G

- The Bihar government has served notices to over 2.21 lakh beneficiaries for not completing construction of their houses under the Pradhan Mantri Awas Yojna-Gramin (PMAY-G).
- Each beneficiary is given ₹1.20 lakh for constructing houses under PMAY-G.
- The Bihar government has also initiated departmental action against 347 government employees for not ensuring complete construction of houses even after disbursement of the entire amount to the account of beneficiaries in their respective rural blocks.

### PMAY - G

- **Launch:** To achieve the objective of “**Housing for All**” by 2022, the erstwhile rural housing scheme **Indira Awas Yojana (IAY) was restructured to Pradhan Mantri Awas Yojana-Gramin (PMAY-G)** w.e.f 1 April, 2016.
- **Ministry Involved:** Ministry of Rural development.
- **Aim:** To provide a pucca house with basic amenities to all rural families, who are homeless or living in kutchra or dilapidated houses by the end of **March 2022**.
  - To help rural people Below the Poverty Line (BPL) in construction of dwelling units and upgradation of existing unserviceable kutchra houses by providing assistance in the form of a full grant.
- **Beneficiaries:** People belonging to SCs/STs, freed bonded labourers and non-SC/ST categories, widows or next-of-kin of defence personnel killed in action, ex servicemen and retired members of the paramilitary forces, disabled persons and minorities.
- **Selection of Beneficiaries:** Through a three stage validation - Socio Economic Caste Census 2011, Gram Sabha, and geo-tagging.
- **Cost Sharing:** The cost of unit assistance is shared between Central and State Governments in the ratio **60:40 in plain areas** and **90:10 for North Eastern and hilly states**.
- **Features:**
  - The minimum size of the house has been increased to 25 sq.mt (from 20sq.mt) with a hygienic cooking space.
  - The unit assistance has been increased from Rs. 70,000 to Rs. 1.20 lakh in plain and from Rs. 75,000 to Rs. 1.30 lakh in hilly states.
  - The assistance for construction of toilets shall be leveraged through convergence with **Swachh Bharat Mission-Gramin (SBM-G)**, **MGNREGS** or any other dedicated source of funding.
  - Convergence for **piped drinking water, electricity connection, LPG gas connection etc.** different Government programmes are also to be attempted.
- **Performance of the Scheme:**
  - **Only 55% of the construction** target has been completed.
    - Of the **2.28 crore houses to be built** for the rural poor, less than **1.27 crore had been built** by January 2021.
  - **Money** has been sanctioned to **almost 85% of beneficiaries**.
  - This scheme has helped in **employment generation**. Many states provided employment to their migrant labourers during lock down.



## Pradhan Mantri Awas Yojana – Urban

- **Launch:** 25 June 2015, intends to provide housing for all in urban areas by year 2022.
- **Implemented by:** Ministry of **Housing and Urban Affairs**
- **Features:**
  - **Addresses Urban housing shortage among the Urban Poor** including the Slum Dwellers by ensuring a pucca house to eligible urban poor.
  - The Mission **covers the entire urban area** consisting of Statutory Towns, Notified Planning Areas, Development Authorities, Special Area Development Authorities, Industrial Development Authorities or any such authority under State legislation which is entrusted with the functions of urban planning & regulations.
  - All houses under PMAY(U) **have basic amenities like toilet, water supply, electricity and kitchen.**
  - The Mission **promotes women empowerment** by providing the ownership of houses in the name of female members or in joint name.
  - **Preference is also given to differently abled persons, senior citizens, SCs, STs, OBCs, Minority, single women, transgender** and other weaker & vulnerable sections of the society.
- **Divided into Four Verticals:**
  - In-situ Rehabilitation of existing slum dwellers using land as a resource through private participation.
  - Credit Linked Subsidy.
  - Affordable Housing in Partnership.
  - Beneficiary-led individual house construction/enhancement.

## To cut at root of narcotics, Centre plans drive against poppy, cannabis

- As the Union government intensifies its crackdown against drugs, cultivation of poppy and cannabis in area the size of over 89,000 football fields has been destroyed in the past three years.
- Aiming to make India “drug-free” by 2047, the Union Home Ministry plans to link recovery and usage of narcotics and banned substances in a particular area to the annual appraisal report of a District Superintendent of Police.
- Manipur has seen the highest-ever destruction of such crops in the past three years. State has launched an alternative livelihood scheme for farmers growing poppy illegally, and also provides cash incentives to destroy the illegal crops.
- The Farmers in Peh village of Ukhrul district were given a cash reward of ₹10 lakh for voluntarily destroying cultivated poppy. Winter hybrid vegetable seeds and saplings of pineapple, apple and spices, including ginger and turmeric, were distributed to farmers. The scheme covered 600 farmers.
- Following the directives by Union Home Minister, all States have created dedicated **Anti-Narcotics Task Forces (ANTF)**. The first ever conference of State ANTFs was held on April 19-20.

Narcotic Drugs and Psychotropic Substances (PITNDPS) Act & Narcotic Drugs and

## Psychotropic Substance (NDPS) Act

- The home ministry governs the Narcotics Control Bureau, the Department of Revenue (DoR) in the finance ministry administers the Narcotic Drugs and Psychotropic Substance (NDPS) Act of 1985 and the Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances Act of 1988.
- The Narcotics Control Bureau (NCB) is a central law enforcement and intelligence agency that has been tasked with combating drug trafficking and the use of illegal substances under the provisions of the NDPS Act.
- The NDPS Act, prohibits a person from the production/manufacturing/cultivation, possession, sale, purchase transport, storage, and/or consumption of any narcotic drug or psychotropic substance.
- The PITNDPS Act, 1988 provides for detention in certain cases for the purpose of preventing illicit traffic in narcotic drugs and psychotropic substances.
- The transfer was being considered under the Government of India (Allocation of Business) Rules, 1961. Transferring administration of the NDPS Act and PITNDPS to MHA will lead to a single command chain and unification of all matters related to narcotics.

## Demystifying Kesavananda Bharati case, webpage delves deep into history

Chief Justice of India (CJI) D.Y. Chandrachud on Monday announced that the Supreme Court has created a special webpage for the Kesavananda Bharati case in which a 13-judge Bench, the largest constituted in the court's history, through a wafer-thin majority of 7:6, held that Parliament cannot amend the "Basic Structure" of the Constitution

The CJI had recently compared the "Basic Structure" of the Constitution to the "North Star", an unflinching guide which shows the way when the path appears convoluted.

The webpage dedicated to the 1973 case has been created in the face of recent criticism from high constitutional authorities that the Basic Structure doctrine diluted parliamentary sovereignty.

- **Kesavananda Bharati Case (1973):**
  - In this case, the **Supreme Court overruled its judgment** in the **Golak Nath case**. It **upheld the validity** of the **24th Amendment Act** stated that **Parliament is empowered to abridge or take away** any of the **Fundamental Rights**.
  - At the same time, it laid down a new doctrine of the 'basic structure' (or 'basic features') of the Constitution.
  - It ruled that the constituent power of Parliament under Article 368 does not enable it to alter the 'basic structure' of the Constitution.
  - This **means that the Parliament cannot abridge or take away a Fundamental Right that forms a part of the 'basic structure'** of the Constitution.
- In Kesavananda Bharati case, a relief was sought against the Kerala government vis-à-vis **two state land reform laws**, which imposed restrictions on the management of

religious property.

- The **case was challenged under Article 26**, concerning the right to manage religiously owned property without government interference.
- **Question underlying the case:** Was the power of Parliament to amend the Constitution unlimited? In other words, could Parliament alter, amend, abrogate any part of the Constitution even to the extent of taking away all fundamental rights?
- The Constitutional Bench in Kesavananda Bharati case ruled by a 7-6 verdict that **Parliament could amend any part of the Constitution so long as it did not alter or amend the basic structure or essential features of the Constitution.**

### Basic Structure

- The court **did not define the term 'basic structure'**, and only listed a few principles — **federalism, secularism, democracy** — as being its part.
- The 'basic structure' doctrine has since been interpreted to include
  - Supremacy of the constitution
  - Rule of law
  - Sovereignty, liberty and republic nature of Indian polity.
  - Judicial review
  - Harmony and Balance between fundamental rights and directive principles.
  - Separation of power.
  - Federal character.
  - Parliamentary system.
  - Rule of equality.
  - Unity and integrity of the nation.
  - Free and fair elections.
  - Powers of SC under Article 32,136,142,147
  - Power of HC under Article 226 and 227.
  - Limited power of parliament to amend the constitution.
  - Welfare state.
  - Freedom and dignity of an individual.
- An **example** of application of basic structure is the **SR Bommai case (1994)**.
  - In this case the Supreme Court upheld the dismissal of BJP governments by the President following the demolition of the Babri Masjid, invoking a threat to secularism by these governments.
- **Arguments related to Basic structure**
  - Critics of the doctrine have called it undemocratic, since unelected judges can strike down a constitutional amendment. At the same time, its proponents have hailed the concept as a safety valve against majoritarianism and authoritarianism.
- **Origin:** The basic structure theory **was first introduced by Justice Mudholkar** in the Sajjan Singh case (1965) by referring to a 1963 decision of the Supreme Court of Pakistan.
  - Chief Justice Cornelius of Pakistan had held that the President of Pakistan could not alter the "fundamental features" of their Constitution.

### Criticisms of Basic Structure:

- The common criticism is that the **doctrine has no basis in the Constitution's**

**language.** The doctrine does not have a textual basis. There is no provision stipulating that this Constitution has a basic structure and that this structure is beyond the competence of amending power

- Its detractors also believe the doctrine accords the **judiciary a power to impose its philosophy** over a democratically formed government
- There is **no definite elucidation on what exactly constitutes basic structure**, thereby, making the doctrine ambiguous
- In recent times, the doctrine has been invoked in cases that has been regarded as examples of judicial overreach. **Ex:** NJAC bill was declared null and void by the SC by relying on this doctrine

### Murals in the making: ethnic themes 'sweep' across walls of 2,500 polling booths

- For art teachers in Karnataka government schools, a new high-visibility canvas has emerged : the walls of classrooms-turned-polling booths. Thousands of voters in the upcoming election will queue past the impromptu art galleries, as part of an initiative to showcase local traditions and culture during the polls.
- The Systematic Voters' Education and Electoral Participation (SVEEP) Committee has taken up measures to establish close to 2,500 theme-based polling stations across the State. Around 40 "ethnic polling stations" will be established in six districts, that will highlight the life of tribal communities in their regions.
- SVEEP:
  - Started **in 2009**, as the **flagship program of the ECI for voter education**.
  - **Primary goal** is to build an inclusive & participative democracy by encouraging all eligible citizens to vote and make an informed decision & ethical choice.

### How can a juvenile be tried as an adult in Court?

- The National Commission for Protection of Children (NCPCR) has recently issued guidelines for conducting a preliminary assessment by the Juvenile Justice Board (JJB). This preliminary assessment is to ascertain whether a juvenile can be tried as an adult.
- Replacing the Juvenile Justice Act, 2000, the 2015 Act, for the first time, provided for trying juveniles in the age group of 16-18 as adults in cases of heinous offences.

How does a child get tried as adult

- The Act has categorised the offences committed by children into three categories — petty offences, serious offences, and heinous offences.
- Section 15 of the JJ Act provides that in case of a heinous offence alleged to have been committed by a child, who has completed or is above the age of sixteen years, the Board shall conduct a preliminary assessment regarding his mental and physical capacity to commit such offence, ability to understand the consequences of the offence and the circumstances in which he allegedly committed the offence.
- Section 18 (3) of the Act further suggests that, if the Board, after preliminary

assessment under section 15 passes an order that there is a need for trial of the said child as an adult, then the Board may order the transfer of the case to the Children's Court having jurisdiction to try such offences. Thus, the sole objective of having such a preliminary assessment is to determine whether a child within the age group of 16-18 years should be tried as an adult in case of heinous offences.

- The child should also be provided with a legal aid counsel through the District Legal Services Authority who shall be present during the preliminary assessment.
- During the preliminary assessment, the Board and experts shall also analyse and take into consideration the Social Investigation Report (SIR), to be prepared by the Probation officer or Child Welfare Officer or any social worker, or a Social Background Report (SBR) to be prepared after interaction with the child or child's family.

### Governors should not sit over Bills, says Supreme Court

- The Supreme Court on Monday sent a strong message that Governors should return Bills that they do not agree to "as soon as possible" and not sit over them, making State Legislative Assemblies wait indefinitely.
- A Bench led by Chief Justice of India referred to the first proviso to Article 200 of the Constitution, which mandates that Governors should not dally over Bills sent to them for assent after they had been passed by Legislative Assemblies.

#### Article 200

- The court agreed that the proviso to Article 200 clearly mandates that Governors should "as soon as possible" return Bills, other than Money Bills, for reconsideration by the House with a note that the proposed law should be reconsidered.
- "The phrase 'as soon as possible' has a significant content and must be borne in mind by constitutional authorities," the Bench noted in the order.

#### Veto Power of the President and the Governor

- Veto Power of the President of India is guided by Article 111 of the Indian Constitution.
- Article 200 of the Indian Constitution deals with the powers of the Governor with regard to assent given to bills passed by the State legislature and other powers of the Governor such as reserving the bill for the President's consideration.
- Article 201 pertains to 'Bills Reserved for Consideration'.
- The Governor of India enjoys absolute veto, suspensive veto (except on money bills) but not the pocket veto.
- Three Types of Veto Power: Absolute veto, Suspensive veto and Pocket veto.
  - **Exception:** The President has no veto power when it comes to the constitutional amendment bills.
    - Constitutional amendment bills cannot be introduced in the state legislature.
- **Absolute Veto:** It refers to the power of the President to withhold his assent to a bill passed by the Parliament. The bill then ends and does not become an act.
- **Suspensive Veto:** The President uses a suspensive veto when he returns the bill to

**the Indian Parliament for its reconsideration.**

- If the Parliament **resends the bill with or without amendment** to the President, he **has to approve the bill** without using any of his veto powers.
- **Exception:** The President **cannot exercise his suspensive veto** in relation to the **Money Bill**.
- **Pocket Veto:** The **bill is kept pending by the President for an indefinite period** when he exercises his pocket veto.
  - He **neither rejects the bill nor returns the bill for reconsideration**.
  - **Unlike the American President** who has to **resend the bill within 10 days, the Indian President has no such time-rule**.
- Veto over State Bills:
  - The **governor is empowered to reserve certain types of bills** passed by the state legislature for the consideration of the President.
    - Then, the **Governor will not have any further role** in the enactment of the bill.
  - The President **can withhold his assent to such bills not only in the first instance but also in the second instance**.
    - Thus, the President **enjoys absolute veto (and not suspensive veto) over state bills**.
  - Further, the President **can exercise pocket veto** in respect of state legislation also.

### SC to set date to hear plea to abolish Collegium

The Supreme Court on Monday said it will give a date for the hearing of a petition seeking the “abolition” of the Collegium system of judicial appointments to the Supreme Court and the High Courts.

#### Issues in collegium

- **Non-transparency in appointments** It is seen as a closed-door affair with no prescribed norms regarding eligibility criteria, or even the selection procedure.
- There is no public knowledge of how and when a collegium meets, and how it takes its decisions with no official minutes of collegium proceedings.
- **Nepotism and favouritism** Allegations of nepotism and favouritism are rampant with judges in the collegium recommending their close relatives.
- **Lack of diversity** - The absence of an institutional mechanism to ensure diversity on the Bench in the judiciary is a problem.
- SCs, STs, OBCs and minorities are grossly underrepresented in the collegium picks.
- **Non-filling of vacancies** - Supreme Court judges often talk about the issue of pendency of cases, but still they are inactive in solving the problem.
- **Difference of opinion** The conflicting opinion within the collegium members is hampering the functioning of the collegium system.
- Recently, while CJI Lalit wanted to circulate the recommendations for appointment to the Supreme Court, two judges in the Collegium preferred deliberations in person.
- **Issues with certain conventions** By convention, once a recommendation for the successor to the CJI's office is made, the Collegium ceases to make decisions.

- Given that the CJI is appointed by seniority, many of them have a short tenure and this sorts of convention may slow down decision-making.

### Collegium

- The Constitution vested in the President the power to make appointments to Supreme Court and High Courts and transfer judges between High Courts.
- The President (to act on the advice of the council of ministers) was required to consult certain authorities such as the CJI or chief justice of the high court appropriately.
- It was meant to reduce the executive element in the appointment process to the minimum and to eliminate any political influence.
- **First Judges Case, 1981 (SP Gupta case)** - The Supreme Court ruled that the word "consultation" could not be interpreted as "concurrence".
- Accordingly the CJI's opinion was **not binding** on the executive.
- **Second Judges Case, 1993** - The court overruled its earlier decisions and held that "consultation" meant "concurrence".
- This means that the advice rendered by the CJI on matters of appointments is **binding** on the President.
- But, the CJI was to formulate the opinion only through a body of senior judges that the court described as the '**collegium**'.
- **Third Judges Case, 1998** The court clarified that the collegium would comprise
  - CJI and 4 senior-most colleagues - Appointments to Supreme Court
  - CJI and 2 senior-most colleagues - Appointments to High Courts
- Additionally, for HCs, the collegium would consult other senior judges in the SC who had previously served in the HC concerned.
- On whether these views of the consultee-judges are binding on the collegium or not, the judgments are silent.
- **NJAC** - The government, through 99th constitutional amendment, sought to replace the collegium with the National Judicial Appointments Commission (NJAC).
- The NJAC included the Union Minister for Law and Justice and two eminent persons, besides the CJI and next two senior most SC judges.
- **Fourth Judges Case (2015)** - The court ruled that the primacy of the judiciary in judges' appointments was embedded in the basic structure of the Constitution.
- It also held that the NJAC law gave politicians an equal say in judicial appointments to constitutional courts and declared NJAC to be **unconstitutional**.

### Vibrant Villages plan to be merged with PM Gati Shakti

The Centre's ambitious Vibrant Villages Programme (VVP), which aims to develop infrastructure and open up villages along the China border to tourists, will be integrated with the Prime Minister's Gati Shakti mega project.

### Vibrant Villages Programme

- It is a **Centrally sponsored scheme**, announced in the **Union Budget 2022-23 (to 2025-26)** for development of villages on the **northern border**, thus improving the **quality of life of people living** in identified border villages.

- It will cover the border areas of **Himachal Pradesh, Uttarakhand, Arunachal Pradesh, Sikkim and Ladakh.**
- It will cover 2,963 villages with 663 of them to be covered in the first phase.
- Vibrant Village Action Plans will be created by the district administration with the help of Gram Panchayats.
- There will **not be overlap with Border Area Development Programme.**
- Objective:
  - The scheme aims to identify and develop the economic drivers based on local, natural, human and other resources of the border villages on the northern border;
  - Development of growth centres on **'hub and spoke model'** through promotion of social entrepreneurship, empowerment of youth and women through skill development and entrepreneurship;
  - Leveraging the **tourism potential through promotion of local**, cultural, traditional knowledge and heritage;
  - Development of **sustainable eco-agri businesses** on the concept of **'one village-one product'** through community-based organisations, cooperatives, NGOs.

#### PM Gati Shakti

- **Aim:** To ensure **integrated planning and implementation of infrastructure projects in the next four years**, with focus on expediting **works on the ground, saving costs and creating jobs.**
  - The Gati Shakti scheme **will subsume the Rs 110 lakh crore National Infrastructure Pipeline** that was launched in 2019.
  - Besides cutting logistics costs, the scheme is also aimed at **increasing cargo handling capacity and reducing the turnaround time at ports** to boost trade.
  - It also **aims to have 11 industrial corridors and two new defence corridors** - one in Tamil Nadu and other in Uttar Pradesh. **Extending 4G connectivity to all villages** is another aim. **Adding 17,000 kms to the gas pipeline network** is being planned.
  - It will **help in fulfilling the ambitious targets** set by the government for 2024-25, including expanding the length of the national highway network to 2 lakh kms, creation of more than 200 new airports, heliports and water aerodromes.
- **Integrated Approach:** It intends to **bring together 16 infrastructure related Ministries.**
  - This will help in **removing long-standing issues** such as disjointed planning, lack of standardisation, problems with clearances, and timely creation and utilisation of infrastructure capacities.
- **Gati Shakti Digital Platform:** It involves the creation of a **common umbrella platform** through which infrastructure projects can be planned and implemented in an efficacious manner by way of coordination between various ministries/departments on a **real-time basis.**
- **Expected Outcomes**
  - The scheme will help mapping the existing and proposed connectivity projects.
  - Also, there will be immense clarity on how different regions and industrial hubs



- in the country are linked, particularly for **last mile connectivity**.
- A holistic and integrated transport connectivity strategy will greatly support **Make in India** and integrate different modes of transport.
- It will help India become the **business capital of the world**.

### Why is PM CARES Fund not subject to public audit?

Alleging that the PM CARES Fund is shrouded in secrecy, the opponents asks why it has no transparency and accountability and is not subjected to any audit or covered under the Right to Information (RTI) Act, despite 60% of its funds coming from public sector undertakings (PSUs).

At a press conference, Congress spokesperson Abhishek Singhvi said that a public fund that gets donations of ₹5,000 crore should come within the ambit of RTI and show accountability.

- **No Audit by CAG:** The Court ruled that while NDRF is to be audited by the CAG of India according to the **Disaster Management Act, 2005**, a public charitable trust like PM-CARES Fund need not be.
  - The Fund will, however, be **audited by an independent auditor**.
- **No Transfer of Funds of PM-CARES to NDRF:** The Court ruled "The PM CARES Fund is a charitable trust registered under the **Registration Act, 1908**. The trust does not receive any Budgetary support or any Government money."
  - NDRF, formed under **Section 46** of the DM Act of 2005, were provided for by Central and State Budgets.
- **Individuals Can Contribute to NDRF:** The court held that there is "no statutory prohibition on individuals to make voluntary contributions to NDRF" under **Section 46(1)(b)** of the DM Act.

### HC orders 'triple tests' for couple facing legal hurdles to have child through surrogacy

- The Karnataka High Court has evolved "triple tests" for considering the plea of a couple to have a child through altruistic surrogacy. It has suggested these to "iron out the creases" in the Surrogacy (Regulation) Act, 2021, which prohibits men above 55 years to have a child through surrogacy.
- The Act states that "surrogate mother should be genetically related" to the couple who wants to have a child through surrogacy "defeats both altruism and logic". "Altruistic surrogacy should mean, surrogacy by an outsider. Therefore, the provision [genetically related] runs counter to the philosophy or principle behind the enactment.
- As the various legal issues on the Act are before the Supreme Court, the High Court has evolved the triple tests — **genetic test, physical test, and economic test** — which the petitioner-husband has to pass to become eligible to become a father through surrogacy.

*Surrogacy (Regulation) Act, 2021*

- Under the Surrogacy (Regulation) Act, 2021, a woman who is a widow or a divorcee between the age of 35 to 45 years or a couple, **defined as a legally married woman and man, can avail of surrogacy** if they have a medical condition necessitating this option.
- It also **bans commercial surrogacy, which is punishable with a jail term of 10 years and a fine of up to Rs 10 lakhs.**
- The **law allows only altruistic surrogacy** where no money exchanges hands and where a surrogate mother is genetically related to those seeking a child.
- **Challenges:**
  - **Exploitation of the Surrogate and the Child:**
    - One could argue that the state must stop the exploitation of poor women under surrogacy and protect the child's right to be born. However, the **current Act fails to balance these two interests.**
  - **Reinforces Patriarchal Norms:**
    - The Act reinforces traditional patriarchal norms of our society that attributes **no economic value to women's work** and, directly affecting the fundamental rights of the women to reproduce under Article 21 of the constitution.
  - **Denies Legitimate income to Surrogates:**
    - Banning commercial surrogacy also **denies a legitimate source of income of the surrogates**, further **limiting the number of women willingly to surrogate.**
    - Overall, this step indirectly **denies children to the couples choosing to embrace parenthood.**
  - **Emotional Complications:**
    - In altruistic surrogacy, a friend or relative as a surrogate mother may lead to **emotional complications not only for the intending parents but also for the surrogate child as there is great deal of risking the relationship in the course of surrogacy period** and post birth.
    - Altruistic surrogacy also **limits the option of the intending couple in choosing a surrogate mother** as very limited relatives will be ready to undergo the process.
  - **No Third-Party Involvement:**
    - In an altruistic surrogacy, there is no third-party involvement.
    - A third-party involvement **ensures that the intended couple will bear and support the medical and other miscellaneous expenses** during the surrogacy process.
    - Overall, a third party **helps both the intended couple and the surrogate mother navigate through the complex process**, which may not be possible in the case of altruistic surrogacy.

### *Surrogacy*

- Surrogacy is an arrangement in which a woman (the surrogate) agrees to carry and give birth to a child on behalf of another person or couple (the intended parent/s).
- A surrogate, sometimes also called a gestational carrier, is a woman who conceives, carries and gives birth to a child for another person or couple (intended parent/s).
- Altruistic surrogacy:

- It involves no monetary compensation to the surrogate mother other than the medical expenses and insurance coverage during the pregnancy.
- Commercial surrogacy:
  - It includes surrogacy or its related procedures undertaken for a monetary benefit or reward (in cash or kind) exceeding the basic medical expenses and insurance coverage.

### *Assisted Reproductive Technology*

- ART is used to treat infertility. It includes **fertility treatments that handle both a woman's egg and a man's sperm**. It works by removing eggs from a woman's body and mixing them with sperm to make embryos. The embryos are then put back in the woman's body.
- **In Vitro fertilization (IVF)** is the most common and effective type of ART.
- ART procedures **sometimes use donor eggs, donor sperm, or previously frozen embryos**. It may also involve a surrogate carrier.
- Legal Provisions:
  - The ART (Assisted Reproductive Technology Act) Regulation 2021 provides a **system for the implementation of the law on surrogacy by setting up of the National Assisted Reproductive Technology and Surrogacy Board**.
  - The Act aims **at the regulation and supervision of ART clinics and assisted reproductive technology banks**, prevention of misuse, and safe and ethical practice of ART services.

### **Mahanadi row: experts question timing of Chhattisgarh's release of water into river**

A controversy has erupted over Chhattisgarh's release of Mahanadi water into the lower catchment area of the river system.

Odisha has long been objecting to Chhattisgarh's management of Mahanadi river water in the upper catchment area. During the past couple of decades, Chhattisgarh has built several barrages restricting flow of water in the lower catchment (Odisha).

The non-availability of water in Mahanadi during non-monsoon season has affected rabi crops and reduced drinking water availability.

*According to Article 262, in case of disputes relating to waters:*

- Parliament may by law provide for the adjudication of any dispute or complaint with respect to the use, distribution or control of the waters of, or in, any inter-State river or river valley.
- Parliament may, by law provide that neither the Supreme Court nor any other court shall exercise jurisdiction in respect of any such dispute or complaint as mentioned above.

### **Major Inter-State River Disputes**

River (s)	States
Ravi and Beas	Punjab, Haryana, Rajasthan
Narmada	Madhya Pradesh, Gujarat, Maharashtra, Rajasthan
Krishna	Maharashtra, Andhra Pradesh, Karnataka, Telangana
Vamsadhara	Andhra Pradesh & Odisha
Cauvery	Kerala, Karnataka, Tamil Nadu and Puducherry
Godavari	Maharashtra, Andhra Pradesh, Karnataka, Madhya Pradesh, Odisha
Mahanadi	Chhattisgarh, Odisha
Mahadayi	Goa, Maharashtra, Karnataka
Periyar	Tamil Nadu, Kerala

#### *Mechanism*

- The resolution of water dispute is governed by the **Inter-State River Water Disputes Act, 1956**.
  - According to its provisions, if a State Government makes a request regarding any water dispute and the Central Government is of opinion that the water dispute cannot be settled by negotiations, then a **Water Disputes Tribunal** is constituted for the adjudication of the water dispute.
- The act was amended in 2002, to include the major recommendations of the Sarkaria Commission.
  - The amendments mandated a one year time frame to setup the water disputes tribunal and also a 3 year time frame to give a decision.

#### *Active River Water Dispute Tribunals in India*

- Krishna Water Disputes Tribunal II (2004) – Karnataka, Telangana, Andhra Pradesh, Maharashtra
- Mahanadi Water Disputes Tribunal (2018) – Odisha & Chattisgarh
- Mahadayi Water Disputes Tribunal (2010) – Goa, Karnataka, Maharashtra
- Ravi & Beas Water Tribunal (1986) – Punjab, Haryana, Rajasthan
- Vansadhara Water Disputes Tribunal (2010) – Andhra Pradesh & Odisha.

### *Issues*

- **Protracted proceedings and extreme delays in dispute resolution.**
  - For example, in the case of Godavari water dispute, the request was made in 1962, but the tribunal was constituted in 1968 and the award was given in 1979 which was published in the Gazette in 1980.
  - The **Cauvery Water Disputes Tribunal**, constituted in 1990, gave its final award in 2007.
- Opacity in the **institutional framework** and guidelines that define these proceedings; and ensuring **compliance**.
- Though award is final and beyond the jurisdiction of Courts, either States can approach Supreme Court under **Article 136** (Special Leave Petition) under **Article 32** linking issue with the violation of Article 21 (Right to Life).
- The **composition of the tribunal is not multidisciplinary** and it consists of persons only from the judiciary.
- The **absence of authoritative water data** that is acceptable to all parties currently makes it difficult to even set up a baseline for adjudication.
- The **shift in tribunals' approach**, from deliberative to adversarial, aids extended litigation and politicisation of water-sharing disputes.
- The **growing nexus between water and politics** have transformed the disputes into turfs of vote bank politics.
  - This politicisation has also led to **increasing defiance by states**, extended litigations and subversion of resolution mechanisms.
  - For example, the Punjab government played truant in the case of the **Ravi-Beas tribunal**.
- **Too much discretion at too many stages of the process.**
  - Partly because of procedural complexities involving multiple stakeholders across governments and agencies.
  - India's complicated federal polity and its colonial legacy.

### *The Inter-State River Water Disputes (Amendment) Bill, 2017*

- In order to **further streamline the adjudication** of inter-State river water disputes, the Inter-State River Water Disputes (Amendment) Bill, 2017 was introduced in Lok Sabha in March 2017 by amending the existing ISRWD Act, 1956.
- The Bill **envisages to constitute a standalone Tribunal with permanent establishment** and permanent office space and infrastructure so as to obviate the need to set up a separate Tribunal for each water dispute which is invariably a time consuming process.
- In the proposed Bill, there is a provision for establishment of a **Dispute Resolution Committee (DRC)** by the Central Government for resolving amicably, the inter-State water disputes within a maximum period of **one year and six months**.

- Any dispute, which cannot be settled by negotiations shall be referred to the Tribunal for its adjudication.
- The dispute so referred to the Tribunal shall be **assigned by the Chairperson** of the Tribunal to a Bench of the Tribunal for adjudication.
- Under the Bill, the requirement of **publication of the final decision of tribunal in the official gazette has been removed.**
- The Bill adds that the decision of the bench of the tribunal will be **final and binding** on the parties involved in the dispute
- The Bill also calls for the **transparent data collection system** at the national level for each river basin and a single agency to maintain data bank and information system.
- The proposed amendments in the Bill will **speed up the adjudication** of water disputes referred to it.
- The Bill was referred to **Parliamentary Standing Committee** on Water Resources for examination.
- The Standing Committee has submitted its recommendation on the Bill, accordingly, the Ministry has prepared draft **Cabinet Note for Official Amendments** to Inter-State River Water Disputes (Amendment) Bill, 2017.

### *Mahanadi River*

- The Mahanadi River system is the **third largest of peninsular India after Godavari and Krishna**, and the **largest river of Odisha state.**
- The catchment area of the river **extends to Chhattisgarh, Madhya Pradesh, Odisha, Jharkhand and Maharashtra.**
- Its basin is **bounded by the Central India hills** on the north, by the **Eastern Ghats** on the south and **east and by the Maikala range** in the west.
- **Source:**
  - It rises from **a place near Sihawa, near Raipur** in the state of Chhattisgarh to the south of Amarkantak.
- **Major Tributaries:**
  - The Seonath, the Hasdeo, the Mand and the Ib joins Mahanadi from **left** whereas **the Ong, the Tel and the Jonk joins it from right.**
- **Mahanadi River Dispute:**
  - The Central Government constituted **Mahanadi Water Disputes Tribunal in 2018.**
- **Major Dams/Projects on Mahanadi:**
  - **Hirakud Dam:** This is the longest dam of India.
  - Ravishankar Sagar, Dudhawa Reservoir, Sondur Reservoir, Hasdeo Bango and Tandula are other major projects.
- **Urban Centres :**
  - Three important urban centres in the basin are **Raipur, Durg and Cuttack.**
- **Industries:**
  - Mahanadi basin, because of its rich mineral resource and adequate power resource, **has a favourable industrial climate.**
    - **Iron and Steel plant** at Bhilai
    - **Aluminium factories** at Hirakud and Korba
    - **Paper mill** near Cuttack
    - **Cement factory** at Sundargarh.

- Other industries based primarily on agricultural produce **are sugar and textile mills.**
- **Mining of coal, iron and manganese** are other industrial activities.

### Centre tells States to scrap levies on power generation

- The Centre issued a terse warning to States against resorting to tax levies on electricity generation, including through imposition of a water cess, noting that there were no provisions in the Constitution that enabled States to do so.
- Any tax/duty on generation of electricity, which encompasses all types of generation... is illegal and unconstitutional," - the Power Ministry
- Some States have imposed taxes/duties... under the guise of levying a cess on the use of water for generating electricity. However, though the State may call it a water cess, it is actually a tax on the generation of electricity - the tax is to be collected from the consumers of electricity who may happen to be residents in other States

What does the constitution say?

- Entry-53 of List-II (State List) authorizes states to put taxes on consumption or sale of electricity in its jurisdiction. This does not include the power to impose any tax or duty on the generation of electricity.
- Article 286 of the constitution explicitly prohibits states from imposing any taxes or duties on supply of goods or services or on both where the supply takes place outside the state.
- Articles 287 and 288 prohibit the imposition of taxes on consumption or sale of electricity consumed by the central government or sold to the central government for consumption by the government or its agencies.
- Any imposition of tax on the non-consumptive use of water of these rivers for electricity generation is in violation of provisions of the Constitution

### Union Minister for MSME launches the revamped CGTMSE Scheme

CGTMSE has been provided with an additional corpus support of ₹9,000 crore in the Union Budget for FY 2023-24 to revamp its Scheme to provide guarantee for additional ₹2 lakh crore to Micro & Small Enterprises.

- Other major changes made in the revamped version include:
  - **Reduction in guaranteed fees** for loans up to ₹1 crore by 50%.
  - **Raising of ceiling** for guarantee from ₹2 crore to ₹5 crore.
  - **Raising the bar for claim settlement** without taking legal action from the **previous limit of Rs. 5 lakhs to Rs. 10 lakhs.**

CGTMSE Scheme

- About:

- It was launched in **2000** by the Government of India (GoI) to make available **collateral-free credit to the micro and small enterprise sector.**
- **Scope:**
  - Both the **existing and the new enterprises are eligible** to be covered under the scheme.
- **Funding:**
  - The corpus of CGTMSE is contributed by the **GoI and SIDBI** in the **ratio of 4:1 respectively.**
  - The Ministry of MSMEs, and **Small Industries Development Bank of India (SIDBI)** established a trust named **Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)** to implement the **CGTMSE Scheme.**
- **Financial Inclusion for MSMEs:**
  - While launching the revamp of CGTMSE, it was announced that CGTMSE will collaborate with National Institute for MSME, Hyderabad for **setting up a Centre of Financial Inclusion.**
  - The Centre is expected to provide **financial literacy and credit counselling to MSEs**, thus helping them to better **utilize the benefits of the CGTMSE Scheme.**

### **TRAI announces changes in incoming calls for mobile users from May 1**

Telecom Regulatory Authority of India (TRAI):

- It is a **regulatory body set up by the Government of India under section 3 of the Telecom Regulatory Authority of India Act, 1997.**
- It is the **regulator of the telecommunications sector** in India.
- **Composition:**
  - It **consists of a Chairperson and not more than two full-time members, and not more than two part-time members.**
  - The chairperson and the members of TRAI are **appointed by the Central Government**, and the **duration** for which they can hold their office is **three years or until they attain the age of 65 years**, whichever is earlier.
- **Government Control over TRAI:**
  - TRAI is **not a completely independent telecom regulator.**
  - Under section 25 of the Act, it **has the power to issue directions** which are **binding on TRAI.**
  - The TRAI is also **funded by the Central Government.**
- **Functions:**
  - **Making recommendations** on various issues;
  - General administrative and **regulatory functions;**
  - **Fixing tariffs and rates for telecom services;** and
  - Any other functions entrusted by the Central Government.
- The **recommendations made by the TRAI are not binding** on the Central Government.
- Central **Government has to mandatorily ask for recommendations from TRAI** with respect to the need and timing of new service providers and the terms and conditions of the licence to be granted to the service provider.



- TRAI **also has the power to** notify in the official gazette the **rates at which telecommunication services are being provided in and outside India.**
- The **TRAI Act was amended in 2000, establishing** a Telecom Disputes Settlement and Appellate Tribunal (**TDSAT**).

Telecom Disputes Settlement and Appellate Tribunal (TDSAT):

- It was **set up to adjudicate any dispute between a licensor and a licensee, between two or more service providers, between a service provider and a group of consumers, and to hear and dispose of appeals against any direction, decision or order of TRAI.**
- **Composition:**
  - The Tribunal **consists of a Chairperson and two Members** appointed by the **Central Government.**
  - The **Chairperson should be or should have been a Judge of the Supreme Court** or the Chief Justice of a High Court.
  - A Member should have held the post of Secretary to the Government of India or any equivalent post in the Central Government or the State Government for a period of not less than two years or a person who is well versed in the field of technology, telecommunication, industry, commerce or administration.

### **ULIP Integration with Digital Systems of Coal Ministry kicks off**

Ministry of Coal chaired a meeting on the integration of Unified Logistics Interface Platform (ULIP) with the digital systems

Unified Logistics Interface Platform:

- It was launched in 2022 as a part of the '**National Logistics Policy (NLP)**'.
- It is designed for **enhancing efficiency and reducing the cost of logistics** in India by creating a transparent, single-window platform to provide real-time information to all stakeholders.
- It was emphasized that the solution should have visibility of **multi-modal transport** and all the existing systems should be integrated with the ULIP system to create a National Single Window Logistics Portal.
- It will provide **real-time monitoring of cargo movement** and ensure the confidentiality of data with end-to-end encryption.
- There are **three key components** of this platform namely
  - Integration with existing data sources of ministries
  - Data exchange with private players
  - Unified document reference in the supply chain

## **ECONOMY**

## FTP expands export promotion scheme to include PM MITRA

Export Promotion Capital Goods (EPCG) Scheme:

- It is a **trade promotion scheme** implemented by the Indian government.
- It **allows the duty-free import of capital goods for the purpose of export production** in India.
- It was first operationalized on **1 April 2015**.
- **Aim:** To **encourage the production of goods for export** by providing import duty concessions on capital goods.
- The EPCG scheme is **administered by the Directorate General of Foreign Trade (DGFT)** and is **governed by the Foreign Trade Policy of India**.
- **Features:**
  - EPCG Scheme **allows import of capital goods** for pre-production, production and post-production **at zero customs duty**.
  - It **covers manufacturer exporters** with or without supporting manufacturer(s), **merchant exporters tied to supporting manufacturer(s)** and **service providers**.
  - **Second-hand goods** of any nature **will not be permitted** under the EPCG scheme.

PM MITRA

- It will **offer the opportunity to create an Integrated Textiles Value Chain**, right from spinning, weaving, processing/dyeing and printing to garment manufacturing etc., at one location and will **reduce the logistics cost of the Industry**.
- PM MITRA Parks will help in creating **world-class industrial infrastructure** that would attract large-scale investment, including **foreign direct investment (FDI)** and encourage innovation and job creation within the sector.
- **Special Purpose Vehicle** owned by the Centre and State Government **will be set up for each park** which will **oversee the implementation** of the project.
- **Funding:**
  - The **Ministry of Textiles will provide financial support** in the form of Development Capital Support up to Rs. 500 crores per park to the Park SPV.
  - A **Competitive Incentive Support (CIS)** of **up to Rs 300 crore per park to the units** in PM MITRA Park shall also be provided to incentivise speedy implementation.
  - **State governments will provide** a contiguous and encumbrance-free land parcel **of at least 1000 acres** of land.

## UK joins trans-Pacific trade bloc in a deal likely to boost GDP by less than 0.1%

- **UK will become the first new member**, and the first in Europe, to **join the CPTPP** since it came into force in 2018.

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

- It is a **free trade agreement (FTA)** between **11 nations: Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam.**
- It was signed in **March 2018.**
- It **succeeded the Trans-Pacific Partnership (TPP)** after the United States withdrew from the TPP in 2017.
- **All 11 countries** of CPTPP **are members** of the Asia-Pacific Economic Cooperation (APEC).

Asia-Pacific Economic Cooperation (APEC)

- It is a **forum of 21 Asia-Pacific economies established in 1989.**
- **Members: Australia;** Brunei Darussalam; **Canada;** Chile; **People's Republic of China;** Hong Kong, China; Indonesia; Japan; Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; the Philippines; **the Russian Federation;** Singapore; **Chinese Taipei;** Thailand; the **United States of America;** Vietnam.
- It seeks to **promote free trade and economic cooperation** throughout the Asia-Pacific region.
- The **APEC Secretariat, headquartered in Singapore,** provides advisory and logistic services as well as research and analysis.
- APEC **decisions are reached by consensus,** and commitments are made on a voluntary basis.

### Audit process to be fully digitalised from April 1

One Indian Audit & Accounts Department One System (OIOS):

- It is an **enterprise-wide end-to-end IT application.**
- It is a **web-enabled solution** with support for **multiple languages** with, **offline functionality, and a mobile app.**
- **All new audit work** in offices under the CAG **will take place only through OIOS.**
- **Applications:**
  - All **audit work** can be **carried out digitally.**
  - Offices will **not have to go through files physically,** and **records can be maintained for eternity.**

Audit

- Auditing, or a financial audit, **is an official examination** and verification of a **business's financial records.**
- The financial records **include a balance sheet, an income statement,** a statement of changes in equity, a cash flow statement, and notes comprising a summary of significant accounting policies and other explanatory notes.
- **The main goal** of auditing is to make sure that a company's **financial statements are accurate and follow regulatory guidelines.**
- Auditing **also gives investors, creditors, and other stakeholders reasonable**

**assurance** that they can rely on a company and its integrity.

### Regulator pulls up companies, auditors for flouting Ind As norms

National Financial Reporting Authority (NFRA):

- The NFRA was **constituted on 01st October 2018**, by the Government of India **under the Companies Act, 2013**.
- It is an **independent regulator** to **oversee the auditing profession and accounting standards** in India.
- **Objective:** To continuously **improve the quality of all corporate financial reporting** in India.
- **Functions and Duties:**
  - **Recommend accounting and auditing policies and standards** to be adopted by companies for approval by the Central Government;
  - **Monitor and enforce compliance** with accounting standards and auditing standards;
  - **Oversee the quality of service of the professions** associated with ensuring compliance with such standards and suggest measures for improvement in the quality of service;
- **Composition:** It consists of a **chairperson**, who shall be a person of eminence and having expertise in accountancy, auditing, finance, or law to be appointed by the Central Government and **such other members not exceeding fifteen consisting of part-time and full-time members**.
- **Powers:**
  - NFRA have the **power to investigate, either suo moto or on a reference** made to it by the Central Government **into the matters of professional or other misconduct committed by any member or firm of chartered accountants** registered under the Chartered Accountants Act, 1949.
  - It has the **same powers as are vested in a civil court** under the Code of Civil Procedure, 1908 while trying a suit.
- **HQ: New Delhi**

### IFC announces it will stop clients funding new coal projects

International Finance Corporation:

- It was founded in 1956 with Washington, DC as its headquarters.
- It is a member of the **World Bank Group**.
- **\*\*Mandate:\*\*** Advance economic development and improve the lives of people by encouraging the growth of the private sector in developing countries.
- **Functions:** It helps countries develop their private sectors in a variety of ways
  - Investing in companies **through loans, equity investments, debt securities** and guarantees.
  - Mobilizing capital from other lenders and investors through loan participations,

- parallel loans and other means.
- Advising businesses and governments to encourage private investment and improve the investment climate.
- **\*\*Governance:\*\***The IFC is owned and governed by its member countries. It is a corporation whose shareholders are member governments that provide paid-in capital and have the right to vote on its matters.
- **The President of the World Bank Group is also the President of the IFC.**

#### World Bank Group

- The World Bank Group is a vital **source of financial and technical assistance** to developing countries.
- It was established in 1944 through the **Bretton Woods Agreement** its mission is to fight poverty with passion and professionalism, for lasting results.
- The World Bank is the collective name for the International Bank for Reconstruction and Development (IBRD) and International Development Association (IDA), two of five international organisations owned by the WB Group.
- The World Bank Group consists of five distinct yet complementary organizations:
  - **International Bank for Reconstruction and Development (IBRD):** It provides loans, credits and grants
  - **International Development Association (IDA):** It provides low or no-interest loans to low-income countries.
  - **International Finance Corporation (IFC):** It provides investment, advice and asset management to private companies and governments.
  - **Multilateral Investment Guarantee Agency (MIGA):** It ensures lenders and investors against political risks such as war.
  - **International Centre for Settlement of Investment Disputes (ICSID):** It settles investment disputes between investors and countries.
- India is not a member of the International Centre for Settlement of Investment Disputes (**ICSID**).

#### Cost inflation index number for FY 2023-24 (AY 2024-25) used for LTCG calculation notified by CBDT

- The Cost Inflation Index number for the current fiscal year 2023-24 is 348 as per a notification of **the Central Board of Direct Taxes (CBDT)**.
- Cost Inflation Index is notified under **the Income-tax Act, 1961 every year since 2001** in the month of June.
- But this year's CII is notified 3 months earlier as compared to last fiscal year.
- Taxpayers will need this CII number at the time of filing income tax return (ITR) next year i.e., AY 2024-25.

#### Cost Inflation Index (CII):

- CII number is **used to adjust the purchase price of assets on the basis of inflation.**
- The CII number helps an individual to **ascertain the inflation-adjusted current price**

- **of an asset.**
- This helps in **calculating capital gains from a transfer or sale of capital assets** after taking inflation into account.
- Capital gain refers to the profit acquired from the sale/transfer of any capital assets, including land, property, stocks, shares, trademarks, patents, etc.
- It **helps taxpayers offset the impact of inflation** as the difference between the purchase and sale price could be substantial due to rising prices.
- The application of the Cost Inflation Index for capital gain **adjusts the purchase price of assets based on their sale price, resulting in smaller earnings and a lower tax amount.**
- **Till FY 2022-23** (ended on March 31, 2023), the **CII number was used to calculate the long-term capital gains from non-equity mutual fund schemes.**
- **But from FY 2023-24**, the indexation benefit on long-term capital gains from non-equity mutual fund schemes **has been removed.**
- A taxpayer will continue to use the CII number to calculate long-term capital gains from house property, land, and building in the event of a sale.
- **What is the formula to calculate inflation-adjusted purchase price?**
  - CII number is used to calculate the inflation-adjusted price of a long-term asset. To calculate the inflation-adjusted price, the CII is used in the following manner,
  - **Inflation-adjusted price = (CII of the sale year/CII of the purchase year) \* Actual price of the asset.**

### Four states raise Rs 5,800 crore through SDLs at bond auction

State Development Loans:

- These are **dated securities** issued by states for meeting their market borrowings requirements.
- **Purpose:** To meet the budgetary needs of state governments.
- The higher the fiscal strength of a state, the lower will be the interest rate (yield) it has to pay for the SDL borrowings.
- These are securities and they are **auctioned by the RBI through the e-Kuber** which is a dedicated electronic auction system for government securities and other instruments.
- Reserve Bank of India holds **SDL auctions once a fortnight.**
- The rate of interest or yield of SDL securities is determined through auction.
- The **interest rate will be slightly higher than that of Central Government securities** (G-secs) of matching tenure.
- The investors in SDL are basically commercial banks, mutual funds, and insurance companies that are attracted by the slightly higher interest

Dated securities

- Dated Government securities are long-term securities or bonds of the government that carries a fixed or floating coupon (interest rate).
- Securities are issued by the **government (centre or state) for mobilizing funds.**

- Mostly financing the **fiscal deficit** is the most important purpose for issuing dated securities.

### NSE Indices launches India's first-ever REITs and InvITs Index

REITs and InvITs Index:

- The new index aims to track the performance of REITs and InvITs that are publicly **listed and traded on the NSE**.
- **Base year: 1 July 2019**
- The index will be reviewed and **rebalanced every quarter**.
- The weights of securities within the index are based on their **free-float market capitalization**, subject to a security cap of 33% each and the aggregate weight of top-3 securities is capped at 72%.
- The top constituents of the Nifty Reits & InvITs index include Embassy Office Parks Reit, Powergrid Infrastructure Investment etc.

REITs

- It is a **company** that owns, operates, or finances **income-generating real estate**.
- Most of them **are publicly traded like stocks**, which makes them highly liquid (unlike physical real estate investments).
- It is modelled after mutual funds; REITs pool the capital of numerous investors.
- This makes it possible for individual investors to earn dividends from real estate investments—without having to buy, manage, or finance any properties themselves.

InvITs

- These are mutual fund-like institutions that enable investments into **the infrastructure sector** by pooling small sums of money from a multitude of individual investors for directly investing in infrastructure
- These are set up as a trust and **registered with SEBI**.
- An InvIT has 4 parties Trustee, Sponsor(s) and Investment Manager and Project Manager.

### RBI issues norms for acceptance of green deposits by banks

- **Purpose:** It is intended to **encourage regulated entities** (usually banks and non-banking financial institutions) **to offer green deposits to customers**, protect the interest of the depositors, aid customers in achieving their sustainability agenda, address greenwashing concerns and help augment the flow of credit to green activities/projects.
- It will apply to all **scheduled commercial banks, including small finance banks and deposit-taking non-banking finance companies** such as housing finance firms.
- The framework shall **come into effect from June 1, 2023**.

- **Key features of the framework:**
  - The entities will **issue green deposits as cumulative or non-cumulative deposits.**
  - **On maturity**, they can be **renewed or withdrawn.**
  - The green deposits shall be **denominated in Indian rupees only.**
  - **All conditions applicable to other public deposits will also be applicable** to green deposits.
  - The **allocation of funds raised from green deposits will be based on the official Indian green taxonomy**, which is yet to be finalised.
  - However, as an interim measure, **REs shall be required to allocate the proceeds raised through green deposits in the categories** such as Renewable energy, Energy efficiency, Clean Transportation, Sustainable water and waste management etc.
  - **Nuclear power generation, direct waste incineration**, landfill projects and hydropower plants larger than 25 MW are among the uses that **are prohibited** using funds raised via green deposits.
  - The **allocation of funds raised** through green deposits by REs during a financial year shall be **subject to an independent Third-Party Verification/Assurance**, which shall be done on an annual basis.
  - **The REs, with the assistance of external firms**, will also **annually assess the impact** associated with the funds.

#### Green Deposit

- It is an **interest-bearing deposit received by regulated entities for a fixed period.**
- The proceeds are **earmarked for being allocated towards green finance.**

#### A big fat problem in milk: What's driving up prices?

- The current price inflation in milk has mainly to do with a shortage of fat. It has led dairies to increase full-cream milk prices more or to cut down fat content through rebranding of existing products. There have even been reports of branded ghee and butter disappearing from store shelves.
- This links to the falling contribution of buffaloes to national milk production. The share of buffaloes — their milk has an average 7% fat and 9% SNF content, against 3.5% and 8.5% of cows — to total output was about 46.4% in 2021-22. In 2000-01, it stood at 56.9%, even as the share of crossbred/exotic cows has risen (18.5% to 32.8%) and that of indigenous/non-descript cattle declined (24.6% to 20.8%) over this period.
- Demand is growing for ghee, ice-cream, khoa, paneer, cheese, and other high-fat milk products. But supply is coming more from crossbreds that give low-fat milk. The mismatch is pushing fat prices higher.
- A more immediate reason for rising fat prices is exports. During 2021-22, India exported over 33,000 tonnes of ghee, butter, and anhydrous milk fat valued at Rs 1,281 crore.
- This also due to low prices received during the Covid lockdowns, escalation in fodder and livestock feed costs, and **lumpy skin disease** outbreak among cattle.



## GST

- Milk doesn't attract any goods and services tax. But SMP is taxed at 5% and milk fat at 12%. So while dairies pay no tax on milk procured from farmers, they have to shell out GST on solids. And input tax credit cannot be claimed, as there's no GST on milk itself. Moreover, the tax incidence goes up as the fat in the reconstituted milk increases.

## Lumpy Skin Disease

- Causes:
  - LSD is **caused by infection of cattle or water buffalo with the poxvirus Lumpy Skin Disease Virus (LSDV)**.
  - According to the **Food and Agriculture Organization (FAO)**, The mortality rate is less than 10%.
  - Lumpy skin disease was first seen as **an epidemic in Zambia in 1929**. Initially, it was thought to be the result of either poisoning or hypersensitivity to insect bites.
- Transmission:
  - Lumpy skin disease is primarily spread between animals by biting insects (vectors), such as mosquitoes and biting flies.
- Symptoms:
  - It primarily consists of fever, fluid excretion from eyes and nose, dribbling of saliva from the mouth and blisters on the body.
  - The animal stops eating and faces problems while chewing or eating, resulting in reduced milk production.
- Prevention and Treatment:
  - **Vaccination** against these diseases is covered under the **Livestock Health and Disease Control Programme of India**.
  - There are **no specific antiviral drugs** available for the treatment of lumpy skin disease. The only treatment available is supportive care of cattle. This can include treatment of skin lesions using wound care sprays and the use of antibiotics to prevent secondary skin infections and pneumonia.
  - Anti-inflammatory painkillers can be used to keep up the appetite of affected animals.

## India plans to appeal against WTO ruling on IT tariffs

India is planning to appeal against a ruling by a panel at the World Trade Organization (WTO) that it violated global trading rules by imposing tariffs on some IT products.

On Monday, the WTO panel gave its ruling related to a 2019 dispute with the European Union, Japan and Taiwan over import duties on IT products.

## Dispute Redressal at WTO

- According to WTO rules, a **WTO member or members can file a case in the**

- Geneva-based multilateral body** if they feel that a particular trade measure is against the norms of the WTO.
- **Bilateral consultation is the first step to resolve a dispute.** If both the sides are not able to resolve the matter through consultation, either can approach for the establishment of a dispute settlement panel.
  - The panel's ruling or report can be challenged at the **WTO's Appellate Body.**
    - Interestingly, **the appellate body of the WTO is not functioning because of differences among member countries** to appoint members in this body. Over 20 disputes are already pending with the appellate body. The **US has been blocking the appointment of the members.**

### Centre will clamp down on Ponzi apps, says FM

Stating that the Centre will clamp down on Ponzi apps to protect investors' hard-earned money, Union Finance Minister said that discussions were on with the Information Technology Ministry and the Reserve Bank of India on the issue.

#### Ponzi

- It is a **fraudulent investing scam** promising high rates of return with little risk to investors.
- The **term "Ponzi Scheme" was coined in 1919** after the name of an Italian con-man named **Charles Ponzi.**
  - He arrived in the US in 1882 and made money through fraudulent schemes.
- It works like a **pyramid scheme** and generates returns for older investors by acquiring new investors, who are promised a large profit at little to no risk.
- It **relies on a constant flow of new investments** to continue to provide returns to older investors and when the flow of fresh investments runs out, the scheme falls apart.
- These are generally **multi-level marketing schemes**, however, Multi-level marketing itself is not illegal in India because there is a product being sold. But direct marketing companies cannot promote pyramid or money circulation schemes.

#### Safeguards in India:

- Ponzi schemes **are banned under the Prize Chit and Money Circulation (Banning) Act, 1978.**
  - It is a **Central Act** but the respective **State governments are the enforcement agency** of this law
- These are also **dealt with by the Enforcement Directorate** under the Prevention of Money Laundering Act, 2002.
- **The Banning of unregulated Deposit Schemes Act 2019** has been enacted to prevent fraudulent schemes.
  - It provides for **severe punishment** ranging from 1 year to 10 years and fines ranging from 2 lakh to 50 crore rupees to act as a deterrent.
  - It has **adequate provisions for disgorgement or repayment** of deposits in cases where deposits have been raised illegally.

- It mentions that the first claim on the recovered money will be that of depositors.

### SEBI bans five entities in LIC front running case, impounds ₹2.44 crore

#### Front Running in Trading

- It is an **illegal practice in the stock market** where an **entity trades based on advanced information from a broker** or analyst before the information has been made available to its clients.
- It is **illegal in India**.
- The strategies commonly used to front-run trades are Buy-Buy-Sell (BBS) trading pattern and the Sell-Sell-Buy (SSB) trading pattern.

#### Buy-Buy-Sell (BBS) trading pattern

- In this trade pattern, the alleged front-runner **by using the non-public information** regarding an impending buy order of the big client **places his buy order before the big client's** buy order.
- As and when the big client places a buy order, the price of the security rises and the **alleged front-runner sells the securities** bought earlier.
- In this way, at the raised price the alleged front-runner makes a profit.

## INTERNATIONAL RELATIONS

## India initiates anti-dumping probe into import of sodium cyanide from China, EU, Japan, Korea

- An application has been filed by Hindusthan Chemical Company and United Phosphorous Ltd for the probe and the imposition of appropriate anti-dumping duty on imports from these nations.
- The Union commerce ministry's investigation arm **Directorate General of Trade Remedies (DGTR)** is probing the alleged dumping of the cyanide originating in or exported from China, the European Union, Japan and Korea.

### Sodium cyanide

- Sodium cyanide appears as a **white crystalline solid, lump solid or powder**.
- It contains equal numbers of sodium cations and cyanide anions.
- It is used as an insecticide, a test reagent for the function of **chemoreceptors**, and in many industrial processes.
- It is also used for the **extraction of gold and silver from their respective ores**, dyes, pigments, and bulk drugs.

### Anti-Dumping Duty

- An anti-dumping duty is a **protectionist tariff** that a domestic government imposes on **foreign imports** that it believes are priced below fair market value.
- Dumping is a process wherein a **company exports a product** at a price that is significantly lower than the price it normally charges in its home (or its domestic) market.
- It is recommended by **the Directorate General of Trade Remedies (DGTR)** and the **Ministry of Finance** within three months of its recommendation imposes/levies such duty.

### countervailing duty

- Countervailing duties or CVDs are **tariffs on imported goods** that are imposed to offset subsidies given by the **exporting country's government**.
- It is a special measure used to **neutralize the negative effects that subsidies** for the production of a good in one country have on that same industry in another country, in which the production of that good is not subsidized.
- While the **Department of Commerce recommends** the CVD, the Department of Revenue in the **finance ministry acts upon** the recommendation within **three months and imposes such duties**.

### countervailing duty (CVD) v/s Anti-dumping duty (AD)

- AD is imposed to **prevent low-priced foreign goods from damaging** the local market. On the other hand, CVD will apply to foreign products that have enjoyed government subsidies, which eventually leads to very low prices.
- While the AD **duty amount depends on the margin of dumping**, the CVD amount

will completely depend upon the subsidy value of the foreign goods.

### UN to start allowing deep sea mining operations from July

International Seabed Authority:

- It is an autonomous international organization established under the **1982 United Nations Convention on the Law of the Sea (UNCLOS)**.
- **Mandate:** It has the mandate to ensure the effective protection of the marine environment from harmful effects that may arise from deep-seabed-related activities.
- It has its headquarters in Kingston, **Jamaica**
- Its primary function is to **regulate the exploration of poly-metallic nodules**.

Poly-metallic nodules

- Polymetallic nodules are rounded **accretions of manganese and iron hydroxides** that cover vast areas of the seafloor.
- These are most abundant on **abyssal plains** at water depths of 4000-6500 metres.
- They are mainly found in the **north-central Pacific Ocean, the southeastern Pacific Ocean, and the northern Indian Ocean**.

### India elected to 'highest' UN statistical body for 4-year term

United Nations Statistical Commission:

- It was established in 1947(HQ: New York) and is the highest body of the global statistical system.
- It brings together the Chief Statisticians from member states from around the world.
- **Functions:**
  - It is the highest decision-making body for **international statistical activities**, responsible for setting **statistical standards** and the development of concepts and methods, including their implementation at the national and international levels.
  - The Statistical Commission oversees the work of the United Nations Statistics Division (UNSD), and it is a **Functional Commission** of the **UN Economic and Social Council**.
- **Membership:** The Commission consists of **24 member countries** of the United Nations **elected by the United Nations Economic and Social Council** based on an equitable **geographical distribution** according to the following pattern:
  - Five members from **African States**
  - Four members from **Asia-Pacific States**
  - Four members from **Eastern European States**
  - Four members from **Latin American and Caribbean States**
  - Seven members from **Western European and other States**
- The term of office of members is **four years**.

- India was a member of the Statistical **Commission last in 2004** and the country is returning to the UN agency after a gap of two decades.

### ICJ rejects Venezuela stance on Guyana border dispute

- **History:**
  - The land boundary between Guyana and Venezuela has been **disputed since its colonial inception between British and Spanish powers** in South America.
  - In the **1840s**, the **British government had the border unilaterally surveyed**, but the proposed line encroached on Venezuelan territorial claims.
  - The **boundary has since been arbitrated (1899)** and bilaterally agreed upon following demarcation (1905) but remains in conflict.
  - While the **British line, accepted by Guyana**, is the **current de facto boundary**, **Venezuela maintains a historic claim to all territory** currently administered by Guyana **west of the Essequibo River**.
  - **Venezuelan contents that the Arbitral Award of 1899** about the frontier between British Guiana and Venezuela **is null and void**.
- **Disputed Area:**
  - Venezuela's **claim along the Essequibo River extends for 1,034 kilometers** before reaching Brazilian territory.
  - At stake is approximately **142,795 square kilometers** that is currently **administered by Guyana**.
  - **Offshore the disputed land territory is maritime space** that was recently discovered to be rich in hydrocarbon resources, upping the stakes of the land boundary dispute.
- **Current Status:**
  - **Guyana submitted the dispute to the International Court of Justice in 2018**.
  - Despite **Venezuela's withdrawal from the case**, proceedings are currently ongoing.

### Chinese planes cross Taiwan Strait median line

- Taiwan Strait, also **called Formosa Strait**, is a **180-kilometre-wide strait separating the island of Taiwan and continental Asia**.
- The strait **extends from southwest to northeast between the South and East China seas**.
- The **narrowest part is 130 km wide**.
- It **reaches a depth of about 230 feet (70 m)** and contains the **Pescadores Islands** (which are controlled by the government of Taiwan).
- The chief **ports are Amoy in mainland China and Kao-hsiung in Taiwan**.
- **Median line of the Taiwan Strait:**
  - It is the **informal dividing line** in the Taiwan Strait between the **Chinese mainland and Taiwan**.
  - It **came about during the Cold War** as a way to try and delineate the two

- opposing sides and reduce the risk of clashes
- **No agreement or treaty ever solidified its status.** But over the decades, it helped keep Taiwan and China's militaries apart.

### 61 dead after clashes between Sudan Army and rivals enter second day

- The Sudanese military and a powerful paramilitary group battled for control of the nation for a second day, signalling they were unwilling to end hostilities despite mounting diplomatic pressure to cease fire.
- Heavy fighting in the capital of Khartoum, the adjoining city of Omdurman and in flashpoints across the country. The rival forces are believed to have tens of thousands of fighters each in the capital alone.
- The clashes are part of a power struggle between Gen. Abdel-Fattah Burhan, the commander of the armed forces, and Gen. Mohammed Hamdan Dagalo, the head of the Rapid Support Forces group. The two Generals are former allies who jointly orchestrated an October 2021 military coup that derailed Sudan's short-lived transition to democracy.

#### Growing tensions

- In recent months, internationally backed negotiations revived hopes for such a transition, but growing tensions between Gen. Burhan and Gen. Dagalo eventually delayed a deal with political parties.
- Volker Perthes, the UN envoy for Sudan, announced that both Gen. Burhan and Gen. Dagalo agreed to a three-hour humanitarian pause in fighting on Sunday.
- On Sunday, the World Food Programme said it temporarily suspended operations in Sudan after three agency employees were killed in clashes the previous day and an aircraft used by the WFP was damaged.

#### From the Past

- April 2019, when Sudan's long-serving authoritarian President Omar al-Bashir was overthrown by military generals following a countrywide uprising against him.
- Four months later the Sovereignty Council, a power-sharing body of military officers and civilians, was constituted to lead Sudan to elections at the end of 2023. Abdalla Hamdok was appointed Prime Minister for the transitional period, and he took office in August 2019.
- But the military overthrew Hamdok's government in October 2021, and Burhan became the de facto leader of Sudan and he announced that the military would hold power until elections were held in July 2023.

### India, Russia agree to deepen trade and economic relations

- India and Russia discussed "trade deficit" during the India-Russia Inter-governmental Commission on Trade, Economic, Scientific, Technological and Cultural Cooperation

- (IRIGC-TEC).
- The FTA talks mark a step-up in economic relations between the two countries despite calls from Western countries for India to gradually distance itself from its dominant weapons supplier, Russia, over its invasion of Ukraine.
  - India's imports from Russia more than quadrupled to \$46.33 billion over the last fiscal year, mainly through oil.
  - Together with the Eurasian Economic Commission, Russia is looking forward to intensifying negotiations on a free trade agreement with India.
  - Manturov said road construction material and equipment and chemicals and pharmaceutical products were in demand in Russia this will create opportunities for Indian companies to increase their supplies to Russia.
  - Russia was potentially seeking to import more than 500 products from India for key sectors including cars, aircraft and trains, given that Western sanctions imposed over Russia's military action in Ukraine have undermined its ability to keep core industries operating.
  - Russia would consider widening the use of "national currencies and currencies of friendly countries". India has been keen on increasing the use of its rupee currency for trade with Russia.

#### India's Stand on Russia

- Russia describes its campaign in Ukraine as a "special military operation" against security threats, while pro-Western Ukraine calls it an unprovoked war of conquest.
- New Delhi has not explicitly criticised the Russian invasion and has called for a peaceful resolution of the conflict through dialogue. Russian-Indian bilateral trade has jumped as the war has progressed.

#### Russia's Route

- Russia's efforts to improve trade with India form part of its strategy to help evade the impact of Western sanctions by boosting commerce with Asian giants including China.
- Moscow is also trying to increase or maintain cooperation with other South Asian countries, most recently agreeing to settle payments in yuan for building a nuclear power plant in Bangladesh and discussing discounted oil exports to Pakistan.

#### SCO members must pool resources, expertise on disaster resilience: Shah

- India assumed the presidency of the SCO in 2022.
- Union Home Minister has called upon the nations of the Shanghai Cooperation Organisation (SCO) to adopt a collective approach to **disaster resilience** by pooling resources and expertise and avoiding the duplication of efforts.
- Mr. Shah said that the SCO would probably be the largest regional organisation in the world, representing 40% of the global population, 25% of the global GDP and 22% of the world's total land area.
- India-led Coalition for Disaster Resilient Infrastructure (CDRI) has 39 members from across the world, the Tsunami Early Warning System for the Indian Ocean Rim countries established by the Indian National Centre for Oceanic Information Services



- serves not just India but nearly two dozen other countries.
- India has organised two knowledge-sharing workshops for SCO members on mitigating the impacts of earthquakes and floods. The Minister identified five major areas for the SCO to work on: **confidence-building efforts in Asia, collective responsibility approach, expanding cooperation in communication and information sharing, identification of priority areas**, and the use of newly developed technology in disaster resilience capacity building.

### Shanghai Cooperation Organization (SCO)

- SCO is a **permanent intergovernmental international organization**.
- It's a **Eurasian political, economic and military organization** aiming to maintain **peace, security and stability** in the region.
- It was created in 2001.
- The SCO Charter was signed in 2002, and entered into force in 2003.
- Genesis<sup>\*\*\*</sup>
  - Prior to the creation of SCO in 2001, **Kazakhstan, China, Kyrgyzstan, Russia and Tajikistan** were members of the **Shanghai Five**.
  - Shanghai Five (1996) emerged from a series of border demarcation and demilitarization talks which the four former Soviet republics held with China to ensure stability along the borders.
  - Following the **accession of Uzbekistan to the organization in 2001, the Shanghai Five was renamed the SCO**.
  - India and Pakistan became members in **2017**.
  - On 17 September, **2021**, it was announced that **Iran would become a full member of the SCO**.
- Objectives
  - Strengthening mutual trust and neighborliness among the member states.
  - Promoting effective cooperation in -politics, trade & economy, research & technology and culture.
  - Enhancing ties in education, energy, transport, tourism, environmental protection, etc.
  - Maintain and ensure peace, security and stability in the region.
  - Establishment of a democratic, fair and rational new international political & economic order.
- Membership<sup>\*\*</sup>
  - Kazakhstan, China, Kyrgyzstan, Russia, Tajikistan, Uzbekistan, India, Pakistan and Iran.
- Structure:
  - **Heads of State Council** – The supreme SCO body which decides its internal functioning and its interaction with other States & international organisations, and considers international issues.
  - **Heads of Government Council** – Approves the budget, considers and decides upon issues related to economic spheres of interaction within SCO.
  - **Council of Ministers of Foreign Affairs** – Considers issues related to day-to-day activities.
  - **Regional Anti-Terrorist Structure (RATS)** – Established to combat terrorism,

separatism and extremism.

### India to host SCO Defence Ministers' meeting this week

India will host Defence Ministers from the Shanghai Cooperation Organisation (SCO) grouping, including China's Li Shangfu and Russia's Sergei Shoigu, later this week

The Defence Ministers will discuss amongst other issues matters concerning regional peace and security, counter-terrorism efforts within the SCO and an effective multilateralism. Defence Minister will also hold bilateral meetings on the sidelines

This will be the first high-level military visit from China since the start of the LAC crisis in April 2020. Previously both sides held the 18th round of military talks between Corps Commanders, agreeing that restoring peace along the border areas would "enable progress" in recently strained relations.

### SCO

- The SCO was founded at a summit in **Shanghai in 2001** by the presidents of Russia, China, the Kyrgyz Republic, Kazakhstan, Tajikistan and Uzbekistan.
- Presently, the SCO comprises **eight member states** namely **India, Kazakhstan, China, the Kyrgyz Republic, Pakistan, the Russian Federation, Tajikistan, and Uzbekistan.**
- SCO nations together encompass nearly **half the human population** and it covers approximately **three-fifths of the Eurasian continent** in terms of geographical expanse.
- The SCO, seen as a **counterweight to NATO**, is an eight-member economic and security bloc and has emerged as one of the largest transregional international organisations.
- India was made an **observer at the SCO in 2005.**
- India and Pakistan became its **permanent members in 2017.**

### India calls UN system 'anachronistic'

In a speech at the UNSC this week, the Indian Permanent Representative called the UN Charter "anachronistic", adding that it has failed in handling the COVID-19 pandemic, the Ukraine war, terrorism and climate change.

India also called for expanding the Security Council's permanent membership and hit out at the "veto power" given to the "P-5" of the U.S., the U.K., France, Russia and China.

This is the first time India has specifically criticised giving the veto to the P-5, clarifying its stand that in any expansion of the Security Council, the veto must be given to all members, or none.

*UNSC:*

- The Security Council was established by the UN Charter in 1945. It is one of the six principal organs of the **United Nations**.
  - The other 5 organs of the United Nations are—the General Assembly (UNGA), the Trusteeship Council, the Economic and Social Council, the International Court of Justice, and the Secretariat.
- Its primary responsibility is **to work to maintain international peace and security**.
- The council is **headquartered at New York**.
- **Members:**
  - The council has 15 members: the **five permanent members and ten non-permanent members** elected for **two-year terms**.
    - The five permanent members are the United States, the Russian Federation, France, China and the United Kingdom.
    - India, for the **eighth time**, has entered the UNSC as a **non-permanent member** last year (2021) and will stay on the council for two years i.e 2021-22.
  - **Each year**, the General Assembly **elects five non-permanent members** (out of ten in total) for a two-year term. The ten non-permanent seats are **distributed on a regional basis**.
  - The **council's presidency is a capacity that rotates every month among its 15 members**.
- *Voting Powers:*
  - Each member of the Security Council **has one vote**. Decisions of the Security Council on matters are **made by an affirmative vote of nine members including the concurring votes of the permanent members**. A "No" vote from one of the five permanent members blocks the passage of the resolution.
  - Any member of the United Nations which is **not a member of the Security Council may participate**, without vote, in the discussion of any question brought before the Security Council whenever the latter considers that the interests of that member are specially affected.
- *India in the UNSC:*
  - India took active part in the formulation of the **Universal Declaration of Human Rights (UDHR)** in 1947-48 and raised its voice passionately against racial discrimination in South Africa.
  - India has played its part in **formulating decisions on several issues** such as admitting former colonies to the UN, addressing deadly conflicts in the Middle East and maintaining peace in Africa.
  - It has contributed extensively to the UN, particularly for the **maintenance of international peace and security**.
    - India has taken part in 43 **Peacekeeping missions** with a total contribution exceeding 160,000 troops and a significant number of police personnel.
  - India's population, territorial size, **Gross Domestic Product (GDP)**, economic potential, civilisational legacy, cultural diversity, political system and past and ongoing contributions to UN activities make India's demand for a permanent seat in the UNSC completely rational.

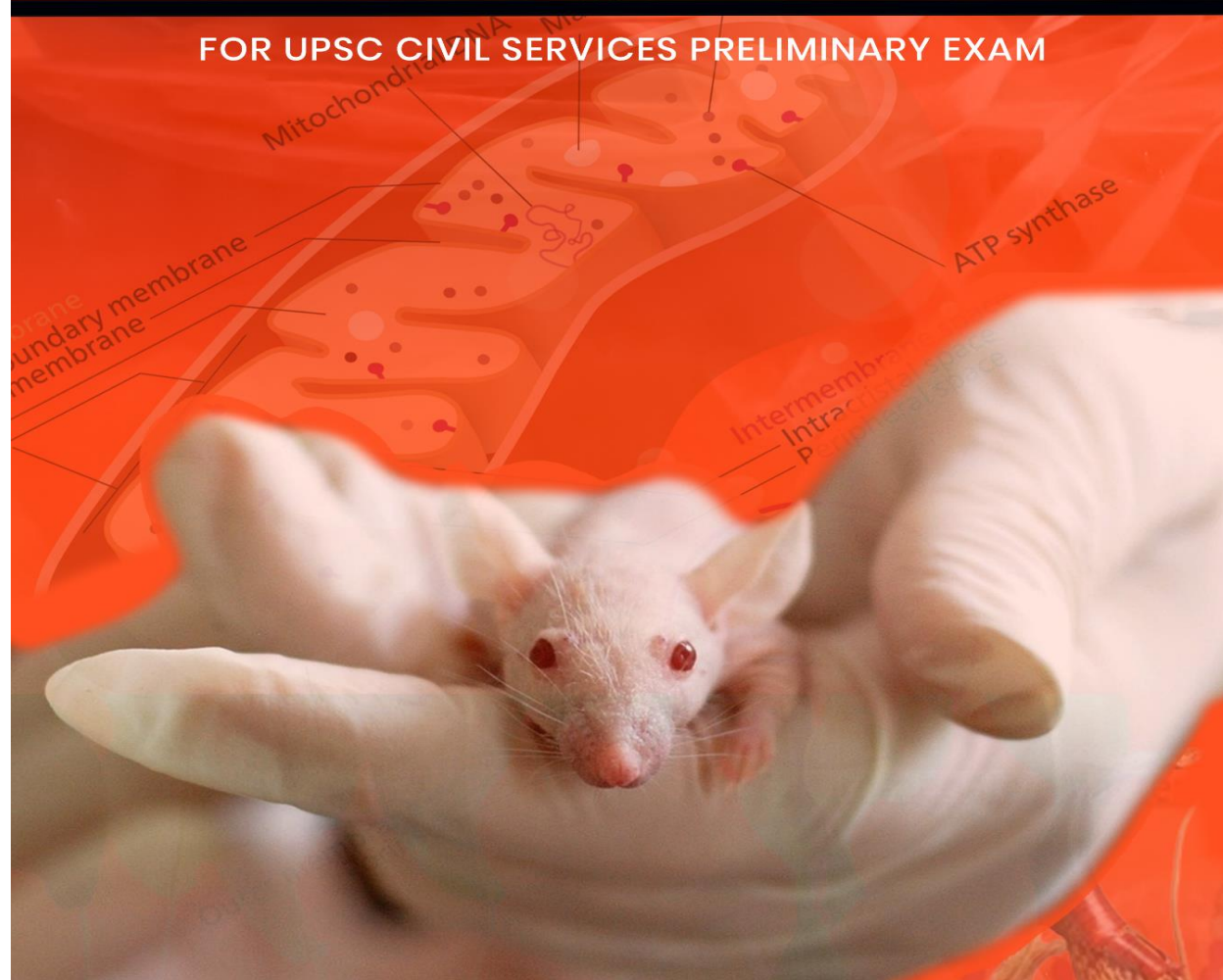
**ENVIRONMENT**

**LATEST EDITION**  
**UPDATED & REVISED**

**18** YEARS  
OF ETHICAL  
IAS COACHING

# LIFE SCIENCE

FOR UPSC CIVIL SERVICES PRELIMINARY EXAM



**FEEL THE PULSE OF UPSC**

**RAJA SIR'S**  
CRACKING IAS ACADEMY  
Since 2005 - Feel the pulse of UPSC

### Scientists Discover Novel Species of Ground-Dwelling Gecko in Forests of Kerala

- The beautifully-patterned **Bent-toed Gecko** is a small, nocturnal species.
- Its scientific name is **Cyrtodactylus (Geckoella) chengodumalaens**.
- It is found on the ground among leaf litter and rocks in forests and partially human-altered landscapes like orchards and other areas with canopy cover.
- It is **endemic to low hills and coastal forests in northern Kerala** and is known from scattered localities spanning a maximum of 120 km distance in Kozhikode, Malappuram, Palakkad, and Thrissur districts.
- It is the second new species of gecko which has been described from Chengodumala highlighting the fact that the biodiversity of these low-elevation hillocks

### More than 90% of the world's salt marshes may soon succumb to sea level rise: Study

- Salt marshes are **coastal wetlands** that are flooded and drained by salt water brought in by the tides.
- Salt marshes **occur worldwide**, particularly in middle to high latitudes.
- They are found in intertidal zones along coastlines, usually in protected areas such as estuaries or bays.
- They are **dominated by grasses and other salt-tolerant plants** such as sedges, cordgrass, rushes, and mangroves.

#### Advantages

- Salt marshes protect shorelines from erosion by buffering wave action and trapping sediments.
- They reduce flooding by slowing and absorbing rainwater and protect water quality by filtering runoff and metabolizing excess nutrients.

### Bandipur Tiger Reserve recently completed 50 years as a Project Tiger Reserve.

- It was established in the 1930s as a wildlife sanctuary, which **became a tiger reserve in 1973 under Project tiger**.
- It is **situated in two contiguous districts** (Mysore and Chamarajanagar) of **Karnataka** and located at the tri-junction area of the States of Karnataka, Tamil Nadu and Kerala.
- **Bandipur Tiger Reserve is surrounded by:**
  - **Nagarahole Tiger Reserve** (Tamil Nadu) in the North West (Kabini Reservoir separates the two).
  - **Mudumalai Tiger Reserve** (Tamil Nadu) in the South.
  - **Wayanad Wildlife Sanctuary** (Kerala) in the South West.
- This area has the **River Kabini** in its north and **River Moyar** in its south.
- **Flora:** It comprises diverse vegetation of **dry deciduous to tropical mixed**

**deciduous.** It includes **rosewood, Indian kino tree, sandalwood, Indian laurel,** clumping bamboo and giant clumping bamboo etc.

- **Fauna:** It is a shelter for the **largest population of wild Asian elephants in South Asia.** It comprises other mammals such as **Bengal tiger, gaur, sloth bear, golden jackal, dhole** and four-horned antelope etc.

### New genus and species of bagworm moth discovered in Kerala

Capulopsyche keralensis:

- The newly found bagworm moth species was named Capulopsyche keralensis. Capulo means **coffee** and psyche means moth or butterfly.
- The name, therefore, translates as '**Coffee moth of Kerala**' as it was found in coffee plantations.
- **Features**
  - Capulopsyche keralensis belongs to the **moth family psychidae**, which consists of very small moths.
  - It is characterized by the case-building behavior of larvae and a **high degree of sexual dimorphism.**
  - Females of many psychid species never develop into a moth and retain larval appearance.
  - This is the first genus and species of the **subfamily Taleporiinae** reported from India.
  - The subfamily Taleporiinae is characterized by **extreme sexual dimorphism.**
  - The females are pale yellowish, wingless, with short legs and antennae.
  - The **larvae of this species** were found scraping on the **bark of trees**, they seem to **feed on the bark tissues** and depositions (**algae**) on the bark.
  - The pupal cases are attached by a thread to the branches and underside of the leaves. The life span of an emerged male adult is up to 4 to 5 days.

Sexual dimorphism

- It is the differences in appearance between males and females of the same species, such as in color, shape, size, and structure, that are caused by the inheritance of one or the other sexual pattern in the genetic material.

### Rail tracks may be shifted out of tiger reserve to protect wildlife in Palamu

- The Palamau Tiger Reserve is in the western side of Latehar district on the **Chhota Nagpur plateau** in
- This tiger reserve is surrounded by the **Auranga River in the North.**
- It is one of the first 9 tiger reserves created in the country at the inception of 'Project Tiger'.
- It is the first reserve in the world in which a **tiger census** was carried out as a **pugmark count**, as early as 1932 under the supervision of J.W. Nicholson

- This Tiger reserve zone is the watershed area for 3 important **rivers Koel, Burha, and Auranga**.
- Many **aquifers** locally called '**Chuan**' are also present inside the reserve. A sulfur **hot spring 'Tatha'** is present near Barwadih.
- **Flora:** The project area is constituted mainly of **Sal forests, mixed deciduous forests, and bamboo groves**.
- **Fauna:** The keystone species are Tigers, Elephants, Leopards, Grey Wolf, Gaur, Sloth Bear, etc.

#### Project Tiger

- The Government of India has taken a pioneering initiative for conserving its national animal, the tiger, by launching "Project Tiger" in 1973.
- Project Tiger is an ongoing **Centrally Sponsored Scheme** of the Ministry of Environment, Forests, and Climate Change providing central assistance to the tiger States for tiger conservation in designated tiger reserves.
- The **National Tiger Conservation Authority (NTCA)** is a statutory body of the Ministry, of Environment, Forests, and Climate Change with an overarching supervisory / coordination role, performing functions as provided in the **Wildlife (Protection) Act, 1972**.

#### Asola Bhatti Wildlife Sanctuary in Delhi to get 2nd native seed nursery

- **Location:**
  - The sanctuary covering a 32.71 sqkm area on the **Southern Delhi Ridge of the Aravalli hill range** on the Delhi-Haryana border lies in **Southern Delhi** and **northern parts of Faridabad** and **Gurugram districts of Haryana state**.
  - It is also **part of the Sariska-Delhi Wildlife Corridor**, which runs from the Sariska Tiger Reserve in Rajasthan to Delhi Ridge.
- **Vegetation: Dry deciduous,**
- **Flora:** Consists of **Prosopis juliflora as the dominant exotic species** and **Diospyros montana as the dominant native species** in the sanctuary.
- **Fauna: Golden Jackals, Striped-Hyenas, Indian crested-Porcupines, Civets, Jungle Cats, Snakes, Monitor Lizards, Mongoose etc.**

#### Aravalli Hills:

- It is one of the **oldest fold mountains of the world** which runs in a **southwest direction, starting near Delhi**, passing through southern **Haryana and Rajasthan**, and ending in **Gujarat**.
- The **highest peak is Guru Shikharat 1,722 metres (5,650 ft)**.
- **Three major rivers** originate from the Aravali hills, namely **Banas, Sahibi and Luni** River (which flows into the Rann of Kutch).

## In a first, Eravikulam National Park gets a fernarium

Eravikulam National Park:

- It is situated in the **Kannan Devan Hills** of the southern Western Ghats of
- This is also the land of “**Neelakurinji**”, the flower that blooms once in twelve years.
- The **Anamudi peak** is situated on the **southern** side of the Park.
- **Flora:** The major part of the park is covered with **rolling grasslands**, but several patches of **shola forests** are also found in the **upper part of the valley**.
- **Fauna:** The Nilgiri Tahr, Gaur, Sloth Bear, Nilgiri Langur, Tiger, Leopard, Giant Squirrel and wild dog are common.

Fern

- Ferns are part of the **Epiphytic family**. They grow naturally in a **soilless condition**.
- The plants obtain water and nutrients through **leaching from trees**.

Epiphytes

- An epiphyte is a plant that **does not place roots in the ground** to grow but on the surface of other plants.

## Anurag Thakur congratulates Anjali Sharma for conquering Mount Kilimanjaro in Africa, wearing Luanchari

Mount Kilimanjaro:

- Mount Kilimanjaro is Africa's tallest mountain and the world's largest **free-standing mountain** (which means not part of a mountain range) located in
- It has three main volcanic peaks namely: **Kibo, Mawenzi, and Shira**.
- Amongst these three peaks, Kibo is the tallest of the three volcanic formations which is also a **dormant volcano** while the other two are extinct volcanoes.
- The mountain is also known for its **snow-capped peak**.
- The mountain has **five main vegetation zones** from the lowest to the highest point: Lower slopes, **montane forest**, heath and moorland, **alpine desert** and summit.
- The Kilimanjaro National park was named a United Nations Educational, Scientific and Cultural Organization (**UNESCO**) **World Heritage site in 1987**.

Volcano

- A volcano is an **opening in a planet's crust** through which **molten rock, hot gases**, and other materials erupt.
- Volcanoes often **form a hill or mountain** as layers of rock and ash build-up from repeated eruptions.
- Volcanoes are classified as
  - **Active volcanoes:** These have a recent history of eruptions; they are likely to



- erupt again.
- **Dormant volcanoes:** These have not erupted for a very long time but may erupt at a future time.
- **Extinct volcanoes:** These are not expected to erupt in the future.

### New butterfly species discovered in Kerala

Caltoris bromus sadasiva:

- Caltoris bromus sadasiva is the first **Bromus swift butterfly** to be documented in the **Western Ghats**.
- The species Bromus swift (Caltoris Bromus), is a skipper butterfly belonging to the **Hesperiidae family** of Lepidoptera (moths and butterflies), from the Western Ghats and Peninsular India.
- Caltoris is an **Indo-Australian genus** has over 15 species distributed across southeast Asia.
- Caltoris Bromus is one of them and has two other subspecies Caltoris bromus bromus and **Caltoris bromus yanuca**.

Vembanad Lake

- Vembanad is the largest lake in Kerala and the longest Lake in India.
- The lake has its source in four rivers\*\*, Meenachil, Achankovil, Pampa and Manimala\*\*.
- **Vallam Kali (Nehru Trophy Boat Race)** is a Snake Boat Race held every year in August in Vembanad Lake.
- In 2002, it was included in the list of wetlands of international importance, as defined by the **Ramsar Convention**.
- The Government of India has identified the Vembanad wetland under the **National Wetlands Conservation Programme**.
- The **Kumarakom Bird Sanctuary** is located on the east coast of the lake.

### House panel suggests study on impact of black carbon on Himalayan glacier

- Black carbon is the **sooty black material emitted from** gas and diesel engines, coal-fired power plants, and other **sources that burn fossil fuel**.
- It is **formed by the incomplete combustion of fossil fuels**, wood and other fuels.
- It **comprises a significant portion of particulate matter or PM**, which is an air **pollutant**.
- It is a **short-lived climate pollutant** with a lifetime of only days to weeks after release in the atmosphere.
- It is an important **contributor to warming** because it is very **effective at absorbing light and heating** its surroundings. It contributes to warming by converting incoming solar radiation to heat.
- It has a **warming impact on climate** that is 460-1,500 times stronger than CO<sub>2</sub>.

- It also **influences cloud formation** and **impacts regional circulation and rainfall patterns.**
- When deposited on ice and snow, black carbon and co-emitted particles **reduce surface albedo (the ability to reflect sunlight) and heat the surface.**

### Triple trouble for Gulf of Mannar islands, study finds

Prosopis chilensis:

- The **Prosopis chilensis** is also known as **Chilean mesquite.**
- It is a small to medium-sized legume tree that grows up to 12 m in height and 1 m in diameter.
- It is a drought-resistant **plant native to** the arid regions of four South American countries namely **Argentina, Bolivia, Chile, and Peru.**

Gulf of Mannar Biosphere Reserve (GoMBR):

- The Gulf of Mannar is one of the biologically richest coastal regions of India.
- It is the first Marine Biosphere Reserve in South and South East Asia.
- In India, the **Gulf of Mannar region in Tamil Nadu** is one of the four major **coral reef** areas and the others are the Gulf of Kutch in Gujarat, Lakhsadweep and Andaman and Nicobar islands.
- It is designated as a **Biosphere Reserve.**
- This Biosphere Reserve encompasses a chain of 21 islands (2 islands already submerged) and adjoining coral reefs off the coasts of the Ramanathapuram and the Tuticorin districts.

### Scientists Find Deepest-Ever Fish, 5 Miles Beneath Ocean's Surface

- Scientists dropped an autonomous "lander" camera into the Izu-Ogasawara Trench near Japan and filmed the snailfish.

Snailfish:

- **The Snailfish is also called a sea snail and it is a deep-sea fish.**
- **Features:**
  - There are over 400 known species of snailfish, and they range in size from just **a few centimetres to nearly a meter in length.**
  - They are Elongated, soft, tadpole-shaped fish with loose and scaleless, though sometimes prickly, skins.
- They are well adapted to life in the **extreme environment of the deep sea**
- Snailfish are found in cold water in the **North Atlantic, North Pacific, Arctic and Antarctic seas.**

Izu-Ogasawara Trench:

- It is located in the **western Pacific Ocean**, on the boundary between the **Philippine Sea Plate and the Pacific Plate**.
- It is one of the most seismically active regions on Earth.
- The trench is formed by the Pacific Plate subducting beneath the Philippine Sea Plate.

**Some people living near Colombian volcano are loath to evacuate**

Nevado del Ruiz Volcano:

- Nevado del Ruiz is an ice-clad **stratovolcano** located in the **Andes Mountains of Colombia**, South America.
- It is part of the former **Ruiz-Tolima volcanic complex** as well as the dangerous **Pacific Ring of fire**.
- **Previous eruption**
  - The volcano has erupted several times in the past, with the most catastrophic eruption occurring on November 13,
  - Since the 1985 eruption, has remained active, with several smaller eruptions occurring in the years following the disaster.

Stratovolcano

- Stratovolcano is also called a **composite volcano**.
- This volcanic landform is characterized by a conical shape formed **by layers of volcanic material** deposited during **successive volcanic eruptions**.
- These volcanoes tend to slope gently at the base but rise quickly near the summit to form tall mountain peaks.
- They are typically **found above subduction zones**, and they are often part of large volcanically active regions, such as the Ring of Fire that frames much of the Pacific Ocean.

Pacific Ring of fire:

- It also known as the **Circum-Pacific Belt** is a path along the Pacific Ocean characterized by active volcanoes and frequent earthquakes.
- Its length is approximately 40,000 kilometres (24,900 miles).
- It traces **boundaries** between several tectonic plates—including the Pacific, **Juan de Fuca, Cocos, Indian-Australian, Nazca, North American, and Philippine Plates**.

**Kerala High Court orders translocation of Arikompan to Parambikulam Tiger Reserve**

Parambikulam Tiger Reserve:

- It is one of the premier Tiger Reserves of India and is endowed by nature in terms of

- species, habitat and ecosystem diversity.
- It is located in the Palakkad **District of Kerala** and lies in between the **Anamalai Hills** and **Nelliampathy Hills** of the Southern Western Ghats.
- **Flora:** It supports diverse habitat types namely; evergreen forests, moist and dry deciduous forests and grasslands.
- **Fauna:** Lion-tailed macaques, Malabar giant squirrel and Flying squirrel, Tarantula (large-bodied spiders) etc.
- There are several endemic, rare, endangered and threatened (RET) species of flora and fauna adding to the diversity of the Reserve. To name a few,
  - *Coscinium fenestratum* and *Utreria salicifolia* (the IUCN 'red listed' medicinal plants endemic to Anamalais)
  - **Tomopterna parambikulamana** (an endemic frog of Parambikulam)
  - *Garra surendranathanii* (an endemic sucker fish)

### Three persons arrested for killing water snake near Arakkonam

Asiatic water snake:

- It is also known as the **checkered keelback**.
- It is a common species in the subfamily Natricinae of the family Colubridae.
- **Habitat:** It is primarily found in freshwater bodies like rivers, lakes, and ponds.
- It is semi-aquatic and rarely ventures far from water. They lead a solitary life and are active both during the day and at night.
- It is non-venomous and is generally considered harmless to humans.
- It is oviparous which means that they lay their eggs.
- **Distribution:** The species is endemic to Asia and found in countries like Afghanistan, Bangladesh, Pakistan, Sri Lanka, India, Myanmar, Nepal, Thailand, Laos, Cambodia etc,
- **Conservation status:**
  - **IUCN:** Least concern
  - **CITES:** Appendix III
  - **Wildlife Protection Act, 1972:** Schedule II

Wildlife Protection Act, 1972

There are **Six Schedules** in this act. These Schedules give a different standard of protection.

- The Listed breeds and types of animals in **Schedule I** and Part II of **Schedule II** get **supreme protection**. Offences under these are prescribed the **highest penalties**.
- **Example:** Himalayan Brown Bear, Indian Elephant etc.
- The Listed breeds and types of animals in **Schedule III** and **Schedule IV** are also secured, but the **penalties are comparatively much lower**.
- **Example:** Barking Deer, Falcons, Kingfisher, Tortoise etc.
- **Schedule V:** Includes the animals which can be hunted.
- **Examples:** Common Crow, Mice, Rats, Fruit Bats etc.
- The plants, trees and crops mentioned in **Schedule VI** are **banned from Cultivation and Planting**.

- **Examples:** Kuth, Red Vanda, Pitcher Plant etc.

### NGT revokes stay on demolition of five studios in Madh Island

- It is an island located in Malad west, in the **western suburbs of Mumbai, Maharashtra.**
- It consists of several **fishing villages and farmlands** bounded by **Arabian sea to the west and Malad creek to the east.**
- Over the years, Madh has evolved from a group of fishing villages to a **prominent residential and holiday destination.**
- It also **houses Airforce and Naval stations.**
- It is primarily **inhabited by Kolis, Marathis, and Roman Catholics.**
- It also has an old Fort, **Madh Fort** and a 16th century **Portuguese Church – St. Bonaventure.**
- 'Erangal' is a picturesque **village** on Madh island which **is a popular filming location.**

### National Green Tribunal (NGT)

- It has been established **under the National Green Tribunal Act 2010.**
- **Mandate:** Effective and expeditious **disposal of cases relating to environmental protection and conservation** of forests and other natural resources.
- **Composition:** It comprises the **Chairperson, the Judicial Members, and Expert Members.**
- The Tribunal is **not bound by** the procedure laid down under the **\*\*Code of Civil Procedure, 1908,\*\*** but shall be **guided by principles of natural justice.**
- **New Delhi is the Principal Place of Sitting** of the Tribunal and Bhopal, Pune, Kolkata and Chennai shall be the other four places of sitting of the Tribunal.

### Miyawaki forest coming up at Deonar in Govandi

- It is a **method of afforestation** developed by the **Japanese botanist** and plant ecology expert **Professor Akira Miyawaki.**
- It involves **planting two to four types of indigenous trees within every square meter.**
- In this method, **the trees become self-sustainable and grow to their full length within three years.**
- Miyawaki forests **grow 10x faster, are 30 x denser and contain 100x more biodiversity.**
- They are **quick to establish, maintenance-free after the first two-to-three years,** and can be **created on sites as small as 3 sq m.**
- The goals of a Miyawaki technique include **improving biodiversity, sequestering carbon, increasing green cover, lowering air pollution,** and preserving the water table.
- Miyawaki forests are **viable solutions** for cities looking to rapidly **build climate**

resilience.

### Large deposits of 15 rare earth elements found in Andhra Pradesh

- REE are a set of **seventeen elements in the periodic table**. These include the **fifteen lanthanides** on the periodic table **plus scandium and yttrium**.
- REE **are all metals**, and the group is often **referred to as the "rare earth metals"**.
- Although called "rare", **they are actually found relatively abundantly** in the Earth's crust.
- **Why they are called "rare"?** These metals are **very difficult to mine** because it is unusual to find them in concentrations high enough for economical extraction.
- These metals have **many similar properties**, and that often **causes them to be found together in geologic deposits**.
- They are **also referred to as "rare earth oxides"** because many of them are typically sold as oxide compounds.
- **Applications:**
  - REE and alloys that contain them are **used in many devices that people use every day** such as computer memory, DVDs, rechargeable batteries, cell phones, catalytic converters, magnets, fluorescent lighting and much more.
  - Rare earths are **used as catalysts, phosphors, and polishing compounds**.

### Periyar Tiger Reserve gets top rank in management review, none 'poor'

- **Location:** It is located in the **Western Ghats of Kerala**.
- It was declared a **Tiger Reserve in 1978**.
- It **gets its name from the River Periyar**, which has its origin deep inside the reserve.
- Two main **rivers, Pamba and Periyar**, drain the reserve.
- It is home to many **tribal communities**, including the **Mannans and the Palians**.
- **Terrain:** **Hilly and undulating** with a **maximum altitude of 2016 m**.
- **Vegetation:** It consists of **tropical evergreen, semi-evergreen and moist deciduous**.
- **Flora:**
  - There are more than **171 species of grasses**.
  - Important flora includes **teak, mangoes, rosewood**, jamun, jacarandas, terminalias, tamarind, royal ponciana, bamboos etc.
- **Fauna:**
  - Includes **Elephants, Wild Pigs, Sambar, Gaur, Mouse Deer**, Dole or Barking Deer, Indian Wild Dog and Tiger.
  - The **major four species of primates are also found** at Periyar - the rare lion-tailed macaque, the Nilgiri Langur, Gee's Golden Langur, Common Langur and Bonnet Macaque.
  - It is also being considered the **habitat of the elusive Nilgiri Tahr**.

## PM inaugurates program 'Commemoration of 50 years of Project Tiger' in Mysuru, Karnataka

5th cycle of the All India Tiger Estimation:

- India's **tiger population rose by 200 in the past four years to reach 3,167 in 2022.**
- According to the data, the tiger population was 1,411 in 2006, 1,706 in 2010, 2,226 in 2014, 2,967 in 2018 and 3,167 in 2022
- The number of **tigers has almost doubled in the last two decades** in the country.
- As many as **1,161 of India's tigers are now in Central India, 824 in the Western Ghats, 804 in the Shivalik Range, 194 in the North-eastern states and 100 in the Sunderbans.**
- The **Western Ghats**, which are home to the largest tiger population in the world, **have shown a significant fall** in the occupancy of tigers.
- Tiger occupancy has also **declined in the states of Jharkhand, Odisha, Chhattisgarh, and Telangana.**
- The north-western states such as Uttarakhand and Uttar Pradesh now have more tigers outside reserves, requiring officials to step up habitat conservation.
- The period covered in the survey — **2018 to 2022** — **also saw 551 tiger deaths**, with 208 of them adults.

## Prime Minister Modi interacts with elephant whisperers at Theppakadu elephant camp in Nilgiris

Mudumalai Tiger Reserve:

- It is located in the Nilgiris District of Tamil Nadu state at **the tri-junction** of three states, viz, **Karnataka, Kerala and Tamil Nadu.**
- The name Mudumalai means the ancient hill range because it is as old as 65 million years when the Western Ghats were formed.
- It has a common boundary with **Wayanad Wildlife Sanctuary** (Kerala) on the **West**, and **Bandipur Tiger Reserve** (Karnataka) on the
- The Theppakadu elephant camp is a popular tourist attraction.
- **Flora:** A variety of habitats ranging from **tropical evergreen forest, moist deciduous forest**, moist teak forest, dry teak forest, secondary **grasslands and swamps** are found here.
- **Fauna:** Elephants, Gaur, Tiger, Panther, Spotted Deer, Barking Deer, Wild Boar, Porcupine etc.

Theppakadu elephant camp

- It is the oldest elephant camp in Asia. This elephant camp was established 100 years before.
- It is located on the **bank of the river Moyar.**
- In this elephant, camp elephants are mainly used in Human- Wild animal conflicts,

Forest Mansoon patrolling, eco-tourism, elephant conservation, Education etc.

### MEE rating of Nagarjunasagar-Srisailem Tiger Reserve improves to 'Very Good'

- **Location:** It is located in the **Nallamala hill ranges** (offshoot of the Eastern Ghats) of **Andhra Pradesh** and spreads across the undivided districts of Guntur, Prakasam and Kurnool.
- It attained the status of a **Tiger Reserve in 1983**.
- This is the **largest tiger reserve in the country** spreading over an area of 5937 Sq. Km.
- The **Krishna River** cuts the basin of this reserve.
- **Flora:** The forests are mostly Southern tropical dry mixed deciduous forest. A wide variety of grass- bamboo etc. and medicinal plants also grow in this area.
- **Fauna:** Top faunal species include:- Tiger, Leopard, Wolf, Wild Dog and Jackal and others includes Sambar, Chital, Chowsingha, Chinkara, Mouse Deer etc. It has recorded the presence of 73 of the 75 big cats in the State.

#### MEE Rating

- According to the Wildlife Institute of India, MEE is defined as the **assessment of how well protected areas are being managed**. Primarily, whether they are protecting their values and achieving the goals and objectives agreed upon.
- The **ratings** are assigned in **four categories** - Very Good, Good, Fair, Poor.
- The criteria or indicators of for assessing India's **Protected Areas** has been **adopted from IUCN's World Commission on Protected Areas framework of MEE**.
- The government has been using the MEE to assess tiger reserves across the country **since its inception in 2006**.
- **Out of the 53 tiger reserves notified at present, only 51 tiger reserves covering a total area of 73,765 square kilometers have been assessed in this 5th cycle**.
- The Periyar Tiger Reserve in Kerala gets Top Rank in this cycle.

### Researchers found new frog species in Meghalaya's Siju cave

#### Amolops siju:

- It has been named after the **Suji cave** where it was discovered.
- It belongs to the **cascade Ranidae** family and genus Amolops.
- Genus Amolops is among the largest groups of ranid frogs (family Ranidae) with 73 known species **widely distributed across** India's North East and north, Nepal, Bhutan, China, the Indochina region and the Malaya Peninsula.
- Cascade frogs are named so because they prefer **small waterfalls**.
- It is the second time that a frog was discovered from inside a cave in the country, the first being the discovery of the Micrixalus spelunca in 2014 from a cave in Tamil Nadu.



### Suji caves

- It is one of the longest cave systems in the world situated in the state of **Meghalaya**.
- It is a 4 km long natural **limestone cave**.

### Volcano eruption in Russia's Kamchatka spews vast ash clouds

#### Kamchatka Peninsula

- It lies in **far eastern Russia**, between the **Sea of Okhotsk** on the west and the **Pacific Ocean** and **Bering Sea** on the east.
- It is **one of the world's most concentrated areas of geothermal activity**, with about 30 active volcanoes.
- It is about **1,200 km long** north-south and about **480 km across** at its widest.
- Approximately **370,000 square km**.
- About the size of New Zealand, it is **one of the largest peninsulas in the world**.
- **Population:** About **300,000 people** live on the peninsula. The **population density is one of the lowest in the world**, at less than a person per square kilometer.
- **Climate:** **Severe**, with prolonged, cold, and snowy winters and wet, cool summers.
- **Regional Capital:** **Petropavlovsk-Kamchatsky**.
- The Kuril island chain runs from the southern tip of the peninsula to a short distance from Japan's northern Hokkaido Island.

### FAHD Minister , Shri Parshottam Rupala to launch “Animal Pandemic Preparedness Initiative (APPI)” under National One Health Mission

#### Animal Health System Support for One Health

- It is a **collaborative project** between the **Department of Animal Husbandry and Dairying** and the **World Bank**.
- It is aiming to create an ecosystem for a **better animal health management system** using the **One Health approach**.
- It will **be implemented in five States** and it envisages improving capacity building of stakeholders involved in animal health and disease management.
- **Duration of the project:** It will be implemented over a **five-year period as Central sector scheme** with a financial provision of Rs. 1228.70 Cr.
- The project calls for participation by Human Health, Forest and Environment Department at the national, regional as well as local for creating and strengthening the One Health architecture including community engagement.

#### Animal Pandemic Preparedness Initiative (APPI)

- The Department Animal Husbandry has conceived a focused framework of the for future **animal pandemic and epidemics**.
- Few key activities under APPI which are at different stages of execution are as follows:

- Defined **joint investigation and outbreak response** teams (National & state)
- Design an overall **integrated disease surveillance system** (built on National Digital Livestock Mission)
- Strengthening the Regulatory system (e.g., Nandi online portal and Field trial guidelines)

### Denmark latest EU country to plan Energy Charter Treaty exit

- It provides a **multilateral framework for energy cooperation** that is unique under international law.
- It is designed to **promote energy security** through the **operation of more open and competitive energy markets** while respecting the principles of sustainable development and sovereignty over energy resources.
- It was **signed in December 1994** and entered into **legal force in April 1998**.
- It also **established the Energy Charter Conference, an inter-governmental organisation which meets on a regular basis** to discuss issues affecting energy cooperation.
- There are currently **53 signatories** and contracting parties to the ECT, **including both the European Union and Euratom**.
- **The Treaty's provisions focus on four broad areas:**
  - the **protection of foreign investments**, based on the extension of national treatment, or most-favoured-nation treatment (whichever is more favourable) and protection against key non-commercial risks;
  - **non-discriminatory conditions for trade** in energy materials, products and energy-related equipment based on WTO rules and provisions to ensure reliable cross-border energy transit flows through pipelines, grids and other means of transportation;
  - **the resolution of disputes between participating states**, and - in the case of investments - between investors and host states;
  - the **promotion of energy efficiency** and attempts to minimise the environmental impact of energy production and use;

### G-7 Ministers commit to work for carbon-free electricity by 2035

- Climate and Energy Ministers and envoys from G-7 countries on Sunday committed to work towards ensuring carbon-free electricity production by 2035 and “accelerating” the phase- out of coal.
- This was part of an agreement by the countries at the end of a two-day conference in Sapporo, Japan, ahead of the G-7 summit in Hiroshima this May.
- Environment Minister Bhupendra Yadav had also participated in the summit with India being invited as a ‘guest’, in the context of its presidency of the G-20.
- The participants on Sunday also agreed to accelerating solar and wind energy investments to produce 1,000 gigawatt (GW) by 2030 from solar power and 150 GW of wind power from off-shore platforms. This, they said, would be in line with recent reports by the Intergovernmental Panel on Climate Change (IPCC) that repeat the

need to ensure that global temperatures not increase by more than 1.5 degrees Celsius of pre-industrial levels by the end of the century.

#### India's Commitment

- At the United Nations-**Conference of Parties (COP) meeting in Glasgow in 2021**, India had objected to language in the agreement to “phase out” and pushed instead for a “phase down” of coal.
- At the **COP** meeting in **Sharm el Sheikh** last year, India pushed for a proposal to phase out all fossil fuel sources, including coal and gas.
- India and China are significantly dependent on coal for electricity, whereas several developed countries, including the United States, Japan, Canada and Europe, are reliant on gas reserves. The latter however did not find mention in the final text of the Sharm el Sheikh agreement.

#### Net Zero

- Net Zero is a **state in which a country's total emissions are offset by absorptions of carbon dioxide** from the atmosphere, like that done by trees and forests, and physical removal of carbon dioxide through futuristic technologies.
- More than **70 countries have promised to become Net Zero by the middle of the century**, and this is being considered vital for meeting the Paris Agreement goal of keeping global temperatures within 2 degrees Celsius from pre-industrial times.
- India's Net Zero target of 2070 silences its critics but it is along expected lines. The big thing here is not the target itself but the fact that **India finally relented and decided to take up a target**, something it had been holding back on for quite some time.
- In its climate action plan submitted under the **Paris Agreement**, India had promised to reduce its emissions intensity, or emissions per unit of **Gross Domestic Product**, by 33 to 35% by the year 2030 compared to 2005 levels.

#### Pittas find new haven in Odisha districts

- In the first-ever census of mangrove pitta birds carried out in two coastal districts of Odisha, 179 such birds were sighted.
- Mangrove pitta birds are a **nearly threatened** species found in a few pockets of eastern India, including Bhitarkanika in Odisha and the Sundarbans in West Bengal.
- The mangrove pitta is found in coastal mangrove forests of India, foraging on the ground and resting on the trees.
- The census was carried out by point count method, either by walking in the forest or using country boats in the creeks. A total of 179 individual mangrove pitta birds were counted.
- The highest concentration of the birds has been found in the mangroves near the Mahipura river mouth inside the Bhitarkanika National Park,” the DFO said.

#### Bhitarkanika National Park

- Bhitarkanika National Park is spread in a vast area of 672 Kms in **Orissa**.

- It is the second largest **Mangrove ecosystems** of India.
- The National Park is essentially a network of creeks and canals which are inundated with waters from rivers **Brahmani, Baitarani, Dhamra and Patasala** forming a unique ecosystem.
- Its proximity to **Bay of Bengal** makes the soil of the area enriched with salts, the vegetation and the species of the sanctuary is comprised of those which are mainly found in the tropical and subtropical inter tidal regions.
- **It is the breeding place for the Salt Water Crocodiles.**
- The Gahirmatha Beach which forms the boundary of the sanctuary in the east is the **largest colony of the Olive Ridley Sea Turtles.**
- The other unique phenomenon is the **Bagagahana or the heronry near Surajpore creek.**
  - Thousands of birds colonise the creek for nesting and the aerial acrobatics performed prior to mating make for an impressive sight.
- Bhitarkanika is also home to **eight varieties of Kingfisher birds** which is also a rarity.

### Seek CSR funds to clear forests of invasive species, says High Court

The Madras High Court on Tuesday directed the State government to notify a scheme inviting corporates to contribute funds to eradicate the exotic and invasive species from forests and hill stations. It also ordered that the scheme be publicised among the chambers of commerce.

#### Corporate Social Responsibility

- The term "Corporate Social Responsibility" in general can be referred to as a corporate initiative to assess and take responsibility for the **company's effects on the environment and impact on social welfare.**
- In India, the concept of CSR is governed by **clause 135 of the Companies Act, 2013.**
- India is the first country in the world to mandate CSR spending along with a framework to identify potential CSR activities.
- The CSR provisions within the Act is applicable to companies with an annual turnover of **1,000 crore and more, or a net worth of Rs. 500 crore and more, or a net profit of Rs. 5 crore and more.**
- The Act requires companies to set up a **CSR committee** which shall recommend a Corporate Social Responsibility Policy to the Board of Directors and also monitor the same from time to time.
- The Act encourages companies to spend **2% of their average net profit in the previous three years** on CSR activities.
- The indicative activities, which can be undertaken by a company under CSR, have been specified under **Schedule VII of the Act.** The activities include:
  - Eradicating extreme hunger and poverty,
  - Promotion of education, gender equality and empowering women,
  - Combating Human Immunodeficiency Virus, Acquired Immune Deficiency Syndrome and other diseases,
  - Ensuring environmental sustainability;
  - Contribution to the Prime Minister's National Relief Fund or any other fund set up by the Central Government for socio-economic development and relief and

funds for the welfare of the Scheduled Castes, the Scheduled Tribes, other backward classes, minorities and women etc.

Invasive species:

- Invasive alien species are plants, animals, pathogens and other organisms that are non-native to an ecosystem, and which may cause economic or environmental harm or adversely affect human health.
- They regenerate at an alarming speed and threaten to edge out the indigenous flora
- **Concerns:**
- The thick foliage arrests the growth of other indigenous species of trees and grass, and causes food shortage for the wildlife population, especially herbivores, during summer.
- Moreover, wildlife would not feed on the leaves of the tree as it was not palatable for them
- Some of the invasive plants have a toxic impact on the landscape after remaining underwater.
- Some weeds have herbal properties, but their toxicity outweighs their utility. For instance, wild boars love to gorge on the succulent rootlets of the *Leea macrophylla* or 'kukura thengia' that is fast clogging the patrolling paths and grasslands.

*Senna spectabilis*

- Introduced as an **ornamental species** and for **use as firewood** from South and Central America or for **paper-making**, the species has become highly invasive in the **Sigur plateau** in both the core and buffer zones of the MTR.
- It has **bright yellow flowers** and has a negative effect on local biodiversity, crowding out native species and limiting food availability for wildlife.
- Forest Department is formulating a 10-year-plan to systematically remove **Lantana camara**, the other major **weed** that poses a threat to biodiversity in both the core and buffer zones of the Tiger Reserve.
- **5 major invasive species of Nilgiris are:**
- **Senna spectabilis**
- **Lantana camara**
- **wattle**
- **Eucalyptus**
- **Pine**
- Eucalyptus and Pine, though exotic, do not spread as quickly as the other species and are considered easier to manage

### **Synchronous lighting by fireflies recorded in another range of Anamalai Tiger Reserve**

- The Pitch-black nights in the Manambolly forests in the Anamalai Tiger Reserve (ATR) along the Western Ghats in Tamil Nadu are witnessing a mega light show of bioluminescence. Several lakhs of fireflies, perched on trees and shrubs, are emitting lights synchronously, turning the forests into a magical world of yellowish-green glow.
- A team and members of the Wild and Dark Earth (WiDE), an NGO engaged in the

study and conservation of nocturnal habitats, recorded the rare phenomenon in the Manambolly range mid-April, after studying fireflies and their life cycle in the tiger reserve for a year.

- The firefly larvae start emerging in the wet, evergreen forests after the first summer rain. Fireflies live as larvae for a year before they pupate and become the adult. Firefly larvae glow to warn predators and use bioluminescence as a defence mechanism & to mate. After mating, female fireflies lay eggs and the whole cycle continues again. Even the eggs display bioluminescence.
- Researchers, to identify the species diversity of fireflies through DNA extraction and sequencing to understand the impact of light pollution on fireflies.
- The study presumes that a reduction in the firefly population may lead to an exponential increase in **leech** populations, affecting the entire ecosystem.
- Studies shows that fireflies detest white light and go for shade when exposed to it. It found that artificial lighting hampered the ability of fireflies to communicate and mate, thus causing a decrease in their populations.

#### Bioluminescence of Fireflies

- When **oxygen** combines with **calcium, adenosine triphosphate (ATP)** and the chemical **luciferin** in the presence of **luciferase**, a bioluminescent enzyme, light is produced.

#### Ganga mission clears projects for ₹638 crore

- The Jal Shakti Ministry's National Mission for Clean Ganga (NMCG) cleared eight projects worth ₹638 crore on Tuesday.
- The projects include the clean-up of the **Hindon**, a tributary of the Yamuna, stretches of which rank as among the most polluted in the country. This clean-up comprises four projects, worth ₹407.39 crore, approved for pollution abatement in Shamli district, Uttar Pradesh.
- Once commissioned, the projects will stem the flow of polluted water into the Krishna river, which, as of now, discharges pollution from Shamli district into the Hindon.
- A project for the development of seven ghats in Prayagraj was also approved.

#### The National Mission for Clean Ganga

- The National Mission for Clean Ganga (NMCG) is implemented by the **\*\*National Council for Rejuvenation, Protection and Management of River Ganga** also known as the **National Ganga Council.\*\*** This mission was established on 12th August 2011 under the **Societies Registration Act, 1860** as a registered society.
- **Objectives:**
  - The mission incorporates **rehabilitating and boosting the existing STPs (Sewage Treatment Plants) and instant short-term steps** to curb pollution at exit points on the riverfront in order to check the inflow of sewage.
  - To maintain the continuity of the water flow without changing the natural season variations.
  - To restore and maintain the surface flow and groundwater.

- To regenerate and maintain the natural vegetation of the area.
- To conserve and regenerate the aquatic biodiversity as well as the riparian biodiversity of the river Ganga basin.
- To allow participation of the public in the process of protection, rejuvenation and management of the river.

### Conservationists in Sri Lanka slam plan to export monkeys to China

- Zoologists in Sri Lanka on Wednesday slammed a recent government proposal exploring the export of monkeys to China, terming it an ad-hoc, illegal, and short-sighted response to a long-standing human-animal conflict.
- The government was studying a proposal from a Chinese company to purchase Sri Lankan toque macaques, a golden brown-coloured monkey endemic to the country.
- Sri Lanka's farmers have been voicing concern over crop damage and consequent financial losses, owing to frequent attacks by monkeys in their areas.
- The official estimates of 3 million toque macaques, Sri Lanka-based primatologist Wolfgang Dittus said that in 1977, when a large-scale enumeration was undertaken, Sri Lanka had about 6,00,000 toque macaques. "Since then, their natural habitat [forest cover] has decreased by 50 to 70 % and that would mean that the monkey population has also dropped, because their existence depends on their natural habitat. So, my estimation is that Sri Lanka currently has about 3,00,000 toque macaques. They are an endangered species"

#### Toque Macaque:

- It is a **reddish-brown-coloured Old World monkey endemic to Sri Lanka**, where it is **locally known as the "rilewa" or "rilawa"**.
- **Scientific Name: Macaca sinica**
- **Distribution:** They are native and **endemic exclusively to Sri Lanka**.
- **Habitat:** They generally occupy **three types of habitat**; hence can be divided into three subspecies. These are
  - the **Common toque macaque** (*Macaca sinica sinica*), occurring in **dry habitat**;
  - the **Pale-fronted toque macaque** (*Macaca sinica aurifrons*), inhabiting **wet areas**;
  - the **Hill-zone toque macaque** (*Macaca sinica opisthomelas*), found at **high elevations**;
- **Features:**
  - The most characteristic feature of this primate is the **toque-like swirl of hair on its head top**.
  - **Males are physically larger than females**.
  - They are **fitted with exceptionally long, thin tails**. They have the distinction of being the **smallest species belonging to the genus Macaca with the longest tails relative to their body size**.
  - They are **highly social animals**, living in units of up to 40 individuals.
- **: Conservation Status**

- **IUCN: Endangered**

### Millions of olive ridleys make it to sea after Odisha beach hosts record turtle nesting

- Millions of baby olive ridley sea turtles crawled towards the Bay of Bengal after emerging from eggshells along Odisha's Rushikulya beach in Ganjam district, recording one of the most successful mass nesting and hatchings in past few decades.
- This year, the Rushikulya beach has hosted around 6.37 lakh turtles — highest ever congregation — from February 23 to March 3. After 50 days, baby turtles have emerged from eggs themselves and started their journey towards sea.
- Generally, an olive ridley turtle lays 100-150 eggs in a cavity created by them with their front flippers in the beach sand. They scoop out sand for hours to create the void. After laying eggs at one go, these creatures cover it again with sand. Before sunrise, the turtles return to the sea, leaving behind the eggs to hatch after 40-60 days. Sometime, a turtle lays eggs in a pit at a place that was previously used by another turtle, leading to loss of thousands of eggs.
- The Rushikulya beach is a unique phenomenon — it is not a wildlife sanctuary, yet turtles feel safe to carry out mass nesting. Baby turtles started coming out from egg shells from the second week of April this year.

### Olive Ridley Turtles

- The Olive ridley turtles are the **smallest and most abundant of all sea turtles** found in the world.
- These turtles are **carnivores** and get their name from their **olive-coloured carapace**.
- They are best known for their **unique mass nesting called Arribada**, where thousands of females **come together on the same beach to lay eggs**.
- **Habitat\*\*:\*\***
  - They are found in **warm waters of the Pacific, Atlantic and Indian oceans**.
  - The **Odisha's Gahirmatha Marine Sanctuary** is known as the **world's largest rookery (colony of breeding animals) of sea turtles**.
- **Protection Status:**
  - **Wildlife Protection Act, 1972:** Schedule 1
  - **IUCN Red List:** Vulnerable
  - **CITES:** Appendix I
- **Initiatives to Protect Olive Ridley Turtles:**
  - **Operation Olivia:**
    - Every year, the **Indian Coast Guard's "Operation Olivia"**, initiated in the early 1980s, helps **protect Olive Ridley turtles as they congregate along the Odisha coast** for breeding and nesting from November to December.
      - It also **intercepts unlawful trawling activities**.
  - **Mandatory use of Turtle Excluder Devices (TEDs):**
    - To reduce **accidental killing in India**, the Odisha government has made it mandatory for trawls to use **Turtle Excluder Devices (TEDs)**, **a net specially designed with an exit cover** which allows the turtles to escape while retaining the catch.



- **Tagging:**
  - The **tagging of the endangered Olive Ridley turtles** using non-corrosive metal tags is done to enable scientists to chart their movements and also know the areas they visit in order to protect the species and their habitats.

### UN reports 'off the charts' melting of glaciers

- The world's glaciers melted at dramatic speed last year and saving them is effectively a lost cause, the United Nations reported on Friday, as climate change indicators once again hit record highs.
- The last eight years have been the warmest ever recorded, while concentrations of greenhouse gases such as carbon dioxide hit new peaks, the UN's World Meteorological Organization said.
- "Antarctic sea ice fell to its lowest extent on record and the melting of some European glaciers was, literally, off the charts," the WMO spelled out as it launched its annual climate overview.
- Sea levels are also at a record high, having risen by an average of 4.62 millimetres per year between 2013 and 2022 — double the rate it was between 1993 and 2002.

### Reviving a 'dead' river: a cultural event to celebrate legacy of Yamuna

- The Yamuna, a river that environmentalists consider ecologically dead in Delhi, will now be the focus of a cultural push to renew India's civilisational and socio-religious connect with its waterbodies.
- The river had been declared "almost dead" by the Central Pollution Control Board (CPCB) in 2015 citing untreated waste flowing into it from several cities along its banks.
- The definition of a river is that it must have life, which is measured by its capacity to dissolve oxygen. The dissolved oxygen content in the Yamuna as it passes through Delhi is zero.
- Environmentalists feel that before recreating a cultural connect, the government needs to take measures to bring the river back to life.

#### Pollution in Yamuna

- Causes of Pollution
  - **Industrial Pollution:**
    - The Yamuna flows into Delhi from Haryana and the state has industrial units in Sonipat (on the banks of Yamuna). **Ammonia is used as an industrial chemical** in the production of fertilisers, plastics and dyes.
  - **Mixing of Drains:**
    - Mixing of **two drains carrying drinking water and sewage or industrial waste, or both**, in Sonipat. The two drains often mix due to overflow or damage to the wall that separates them.

- Effects of Rising Ammonia:
  - Ammonia reduces the amount of oxygen in water as it is transformed to oxidised forms of nitrogen. Hence, it also **increases Biochemical Oxygen Demand (BOD)**.
    - Water pollution by organic wastes is measured in terms of BOD.
  - If the **concentration** of ammonia in water is **above 1 ppm**, it is **toxic to fishes**.
  - In humans, **long term ingestion** of water having ammonia levels of 1 ppm or above may cause **damage to internal organs**.

#### Yamuna

- **Source:** The river Yamuna, a **major tributary of river Ganges**, originates from the Yamunotri glacier near Bandarpooch peaks in the Mussoorie range of the lower Himalayas in Uttarkashi district of Uttarakhand.
- **Basin:** It meets the Ganges at the **Sangam in Prayagraj**, Uttar Pradesh after flowing through Uttarakhand, Himachal Pradesh, Haryana and Delhi.
- **Length:** 1376 km.
- **Important Dam:** Lakhwar-Vyasi Dam (Uttarakhand), Tajewala Barrage Dam (Haryana) etc.
- **Important Tributaries:** Chambal, Sindh, Betwa, Ken, Tons, Hindon.

#### South African cheetah translocated to KNP dies

- One of the cheetahs translocated to Madhya Pradesh's Kuno National Park (KNP) from South Africa died.
- Notably, this is the second such incident at KNP in almost a month. Earlier, Namibian cheetah Sasha died due to a kidney ailment on March 27.

#### Why?

- Translocated cheetahs have been known to die in India due to various reasons, including lack of genetic diversity, inadequate adaptation to the new environment
- When cheetahs are translocated from one region to another, they may face challenges adapting to the new environment.
- Additionally, if the translocated cheetahs do not have enough genetic diversity, they may be more susceptible to diseases or other health problems.
- There are many factors to consider, such as the health and genetic diversity of the animals, the availability of suitable habitat and prey, and the potential for conflict with humans and other animals.

#### Cheetah

- The cheetah (*Acinonyx jubatus*) is a **large cat native to Africa and central Iran**.
- **Habitat:** The cheetah occurs in a variety of habitats such as **savannahs in the Serengeti**, arid mountain ranges in the **Sahara and hilly desert terrain in Iran**.
- **Protection status:** It is listed as Vulnerable on the IUCN Red List.

- **Re-introduction:** Cheetah was declared extinct from India in 1952 and is considered the only large mammal that has gone extinct since the country's independence. **India is the only country in Asia to have all the major big cats in the wild**(lions, tigers and leopards included).

### After death of two cheetahs, M.P. seeks new site for the felines

- The Madhya Pradesh Forest Department has asked the Central government for an "alternative" site for cheetahs currently introduced at the Kuno National Park (KNP), which has seen the death of two felines in less than a month.
- A senior official in the National Tiger Conservation Authority (NTCA), told that mortality among cheetahs was expected and Project Cheetah's planning factored this in. "Even if 50% of the animal population survives, it should be considered a success.

### Different site for cheetahs

- While the existing population of cheetahs would remain within the larger Kuno landscape, newer batches of imported cheetahs would be located in **Gandhi Sagar and Nauradehi wildlife sanctuaries** in M.P. These are reserves that are still being developed to be made suitable for hosting cheetahs.
- The incident is seen as a major setback for the ambitious Project Cheetah

### Space

- Notably, before the cheetahs were imported, some experts had cautioned that shortage of space was likely to affect the cheetah reintroduction project at the KNP, which has a core area of 748 sq. km and buffer zone of 487 sq. km.
- M.P. Principal Chief Conservator of Forest (Wildlife) has written a letter to the NTCA, requesting for an alternative place for the cheetahs, like the Gandhi Sagar or the Nauradehi in M.P. as alternate sites.
- According to some wildlife experts, There are issues of lack of space and prey for the African cheetahs in KNP, a cheetah needs 100 sq. km area for its movement.

### Scientists discover second largest blue hole in the world off Mexico Coast

Scientists have discovered a colossal blue hole which has been confirmed to be the second-deepest blue hole in the world off the coast of the Yucatan Peninsula in Mexico.

- It is a type of **underwater sinkhole or vertical cave** that is typically found in low-lying **coastal karst platform regions**.
- These are formed when **limestone or other carbonate rock** is dissolved by slightly acidic groundwater over a long period.
- **Features of Taam Ja Blue hole**
- It is around 900 feet deep and scientists have dubbed it the **second-deepest blue hole** found on the planet.

- It has a nearly circular shape at its surface with steep sides that form a large conic structure covered by biofilms, sediments, limestone, and gypsum ledges.
- It was found in the **central portion of Chetumal Bay**, where submerged coastal karstic sinkholes locally named 'pozas' have been reported.
- A series of discontinuous terraces were detected at water depths, near the eastern and north-western walls of the blue hole before developing steep and almost vertical slopes.
- There is **variation in salinity** and **temperature** inside the blue hole.

#### Yucatan Peninsula

- It is a **Northeastern projection** of Central America which is **lying between the Gulf of Mexico** to the west and north and the **Caribbean Sea** to the east.
- The peninsula is almost wholly composed of beds of coralline and porous limestone rocks.

#### Sinkhole

- It can be formed due to **natural processes or human activity**.
- It is formed in the areas of **"karst" terrains**, where the rock below the surface of the Earth can be easily dissolved by groundwater.
- Karst terrain is created from the **dissolution of soluble rocks**, mostly limestone and dolomite and is characterised by distinctive landforms such as caves, sinkholes and springs.
- These can also be formed due to **human activity** due to broken land drains, water mains and sewerage pipes, increased rainfall etc.

#### SC modifies order on ESZ around protected forests

The Supreme Court on Wednesday, modified its judgment to have mandatory eco-sensitive zones (ESZ) of a minimum one kilometre around protected forests, national parks and wildlife sanctuaries across the country.

Mining within the national park and wildlife sanctuary and within an area of one kilometre from the boundary of such national park and wildlife sanctuary shall not be permissible

SC said that declaring ESZs will not hamper the day-to-day activities of the citizens

#### *Eco Sensitive Zones*

- The **National Wildlife Action Plan (2002-2016)** of the **Ministry of Environment, Forest and Climate Change (MoEFCC)** stipulated that state governments should declare land falling **within 10 km of the boundaries of national parks and wildlife sanctuaries** as eco-fragile zones or **Eco-Sensitive Zones (ESZs)** under the **Environmental (Protection) Act, 1986**.
- While the **10-km rule is implemented as a general principle**, the extent of its application can vary. **Areas beyond 10 km can also be notified by the Union**

**government as ESZs**, if they hold larger ecologically important “**sensitive corridors**”.

- **Activities Around ESZs:**
  - **Prohibited Activities:** Commercial mining, saw mills, industries causing pollution (air, water, soil, noise etc), establishment of major **hydroelectric projects (HEP)**, commercial use of wood.
  - **Regulated Activities:** Felling of trees, **establishment of hotels and resorts, commercial use of natural water**, erection of electrical cables, drastic change of agriculture system, e.g., adoption of heavy technology, pesticides etc, widening of roads.
  - **Permitted Activities:** Ongoing agricultural or horticultural practices, **rainwater harvesting, organic farming, use of renewable energy sources**, adoption of green technology for all activities.
- **Significance of ESZs:**
  - **Minimise the Impact of Development Activities:**
    - To **minimise the impact of urbanisation** and other developmental activities, the areas adjacent to protected areas have been declared as Eco-Sensitive Zones.
  - **In-situ Conservation:**
    - ESZs help in **in-situ conservation, which deals with conservation of an endangered species** in its natural habitat, for example the conservation of the **One-horned Rhino of Kaziranga National Park, Assam**.
  - **Minimise Forest Depletion and Man-Animal Conflict:**
    - Eco-Sensitive Zones **minimise forest depletion** and man-animal conflict.
    - The protected areas are based on the core and buffer model of management, through which local area communities are also protected and benefitted.
  - **Minimise the Negative Impact on the Fragile Ecosystems:**
    - The purpose of declaring eco-sensitive zones around protected areas is to create some kind of a '**Shock Absorber**' for the protected area.
    - They also act as a **transition zone from areas of high protection to areas involving lesser protection**.
- **Challenges Associated with ESZs:**
  - **Climate change:**
    - **Climate change** has generated land, water and ecological stress on the ESZs.
      - For example, **frequent forest fires or the Assam floods** which badly affected the **Kaziranga National Park** and its wildlife.
  - **Encroachment of Forest Rights:**
    - Sometimes, execution of The **Environmental Protection Act 1986** and the **Wildlife Protection Act 1972** makes the authorities ignore **forest communities' rights and impact their life and livelihood**.
      - It also includes dilution of rights provided to **gram sabha** for developmental clearances.
      - **Recognition of forest rights and gram sabha's consent were preconditions for considering proposals under The**

**Forest Rights Act 2006** to divert forest land for non-forestry purposes – until the **MoEFCC did away with them in 2022.**

### The threat of rising sea levels

The report, entitled 'State of the Global Climate 2022', was published last week. Along with accelerating sea-level rise, it focused on a consistent rise in global temperatures, record-breaking increases in the concentration of greenhouse gases as well as glacier loss, sustained drought-like conditions in East Africa, record rainfall in Pakistan, and unprecedented heatwaves that struck Europe and China in 2022.

Droughts, floods and heatwaves affected communities on every continent and cost many billions of dollars. Antarctic sea ice fell to its lowest extent on record and the melting of some European glaciers was, literally, off the charts.

- **Sea Level Rise (SLR):**
  - SLR is an **increase in the level** of the **world's oceans** due to the effects of climate change, especially **global warming**, induced by **three primary factors**: Thermal Expansion, Melting Glaciers and Loss of Greenland and Antarctica's ice sheets.
  - Sea level is primarily measured using tide stations and satellite laser altimeters.
- **SLR is Linked to Three Primary Factors:**
  - **Thermal Expansion:** When water heats up, it expands. About half of the sea-level rise over the past 25 years is attributable to warmer oceans simply occupying more space.
  - **Melting Glaciers: Higher temperatures** caused by global warming have led to **greater-than-average summer melting of large ice formations** like mountain glaciers as well as **diminished snowfall** due to later winters and earlier springs.
    - That creates **an imbalance between runoff and ocean evaporation**, causing sea levels to rise.
  - **Loss of Greenland and Antarctic Ice Sheets:** As with mountain glaciers, increased heat is causing the massive ice sheets that cover **Greenland and Antarctica** to melt more quickly, and also move more quickly into the sea.
- **Rate of SLR:**
  - **Global:** Global sea level has been rising over the past century, and the rate has accelerated in recent decades. The average global sea level has **risen 8.9 inches between 1880 and 2015**. That's much faster than in the previous 2,700 years.
    - Also, **Intergovernmental Panel on Climate Change (IPCC)** released **'The Special Report on the Ocean and Cryosphere in a Changing Climate'** in 2019 which underlined the dire changes taking place in oceans, glaciers, and ice-deposits on land and sea.
  - **Regional:** SLR is **not uniform** across the world. Regional SLR may be higher or lower than Global SLR due to subsidence, upstream flood control, erosion, regional ocean currents, variations in land height, and compressive weight of

- Ice Age glaciers.
- **Consequences of SLR:**
    - **Coastal Flooding:** Globally, eight of the **world's 10 largest cities** are near a coast, which is threatened by coastal flooding.
    - **Destruction of Coastal Biodiversity:** SLR can cause **destructive erosion**, wetland flooding, aquifer and agricultural soil contamination with salt, and lost habitat for biodiversity.
    - **Dangerous Storm Surges:** Higher sea levels are coinciding with more dangerous **hurricanes** and typhoons leading to loss of life and property.
    - **Lateral and Inland Migration:** Flooding in low-lying coastal areas is forcing people to migrate to the higher ground causing displacement and dispossession and in turn a **refugee crisis worldwide**.
    - **Impact on Infrastructure:** The prospect of higher coastal water levels threatens basic services such as internet access.
    - **Threat to Inland Life:** Rising seas can contaminate soil and groundwater with salt threatening life farther away from coasts.
    - **Tourism and Military Preparedness:** Tourism to coastal areas and military preparedness will also be negatively affected by an increase in SLR.

### **EAC clears pen monument project in T.N.**

- The Expert Appraisal Committee (EAC) of the Union Ministry of Environment, Forest and Climate Change has recommended the proposal to construct Pen Monument in the Marina beach, for coastal regulation zone clearance with conditions.
- The EAC has noted that the National Centre for Coastal Research must monitor erosion and sand accretion and a no-objection certificate must be sought
- The EAC has mandated that the number of visitors be maintained at any given time as stated in the crowd management plan and groundwater not be extracted within the CRZ area for construction.
- Moreover, construction should not be carried out during the turtle nesting season.
- The CRZ clearance is also subject to the final order of the National Green Tribunal

### **Expert Appraisal Committees**

- Expert Appraisal Committees (EAC), also known as Environmental Appraisal Committees, exist at the Union as well as state levels (state expert appraisal committee or SEAC) to advise the government on environmental clearance of development projects.
- According to the Environment Impact Assessment (EIA) Notification, 2006, evaluation of proposals involves four steps: screening, scoping, public hearing and appraisal.
- EAC/SEAC are involved in various capacities in all the stages, except for public hearing. The selection criteria for EAC chairpersons are also given in the EIA Notification, 2006.
- Such committees have been constituted (but not limited to) for different sectors such as River Valley/Hyrd, Industrial projects, Coal mining, Non-coal mining, Thermal power plants, Infrastructure/Coastal Regulation Zone, Nuclear etc.
- The EACs' primary role in the environmental clearance (EC) process is to give

- recommendations to the Ministry of Environment, Forest and Climate Change (MoEFCC) on project proposals after considering the potential impacts of the project.
- The MoEFCC normally accepts these recommendations, but it could disagree and ask the EAC to reconsider its recommendations.
  - EAC members are appointed because of their expertise and their role in the process is to provide an expert opinion on a proposed project, its impacts and possible mitigative measures to the MoEFCC.
  - The financial implications of the process or any delay in approving a project should not be a relevant consideration for the EACs.

### India To Join International Climate Action In Civil Aviation From 2027

India will start participating in the International Civil Aviation Organisation's (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation (CORSA) and the Long-Term Aspirational Goals (LTAG) in 2027.

The ICAO has been tasked to reduce carbon emissions from international civil aviation as one of its focus areas. In order to mitigate carbon emissions from aviation and its impact on climate change, the global body has adopted several key aspirational goals.

International Civil Aviation Organisation (ICAO):

- ICAO is an **intergovernmental specialized agency associated with the United Nations (UN)**.
- It was **established in 1947** by the Convention on International Civil Aviation (1944) known as **Chicago Convention**.
- **Headquarters: Montreal, Canada**
- **Functions:**
  - ICAO is dedicated to **developing safe and efficient international air transport** for peaceful purposes and ensuring a reasonable opportunity for every state to operate international airlines.
  - It **sets standards and regulations necessary for aviation safety, security and facilitation, efficiency, and economic development of air transport** as well as to improve the environmental performance of aviation.
  - It also **serves as a clearinghouse for cooperation and discussion on civil aviation issues** among its 193 member states.
  - It also **promotes regional and international agreements** aimed at liberalizing aviation markets.
  - It helps to **establish legal standards to ensure that the growth of aviation does not compromise safety**, and encourages the development of other aspects of international aviation law.

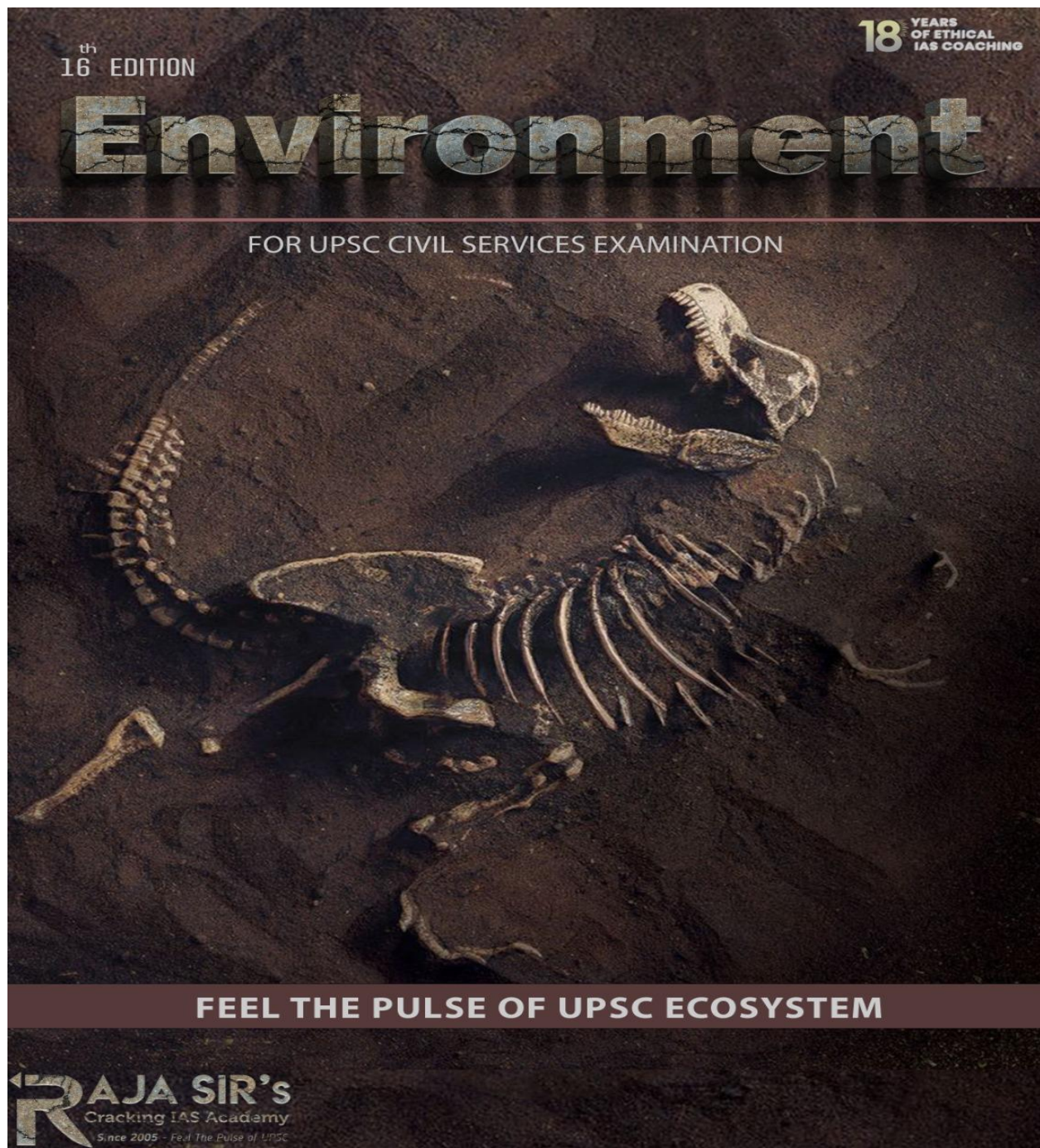
Carbon Offsetting and Reduction Scheme for International Aviation (CORSA)

- It is a **global market-based measure designed to offset international aviation CO2 emissions** in order to stabilize the levels of such emissions.
- Offsetting of CO2 emissions will be **achieved through the acquisition and**



**cancellation of emissions units from the global carbon market** by aeroplane operators.

- **It does not apply to domestic aviation.** Under it, **aircraft operators will begin monitoring their emissions from international flights** and begin acquiring offsets for their emissions growth.



**SCIENCE & TECHNOLOGY**

**Unified gas pipeline tariff to boost access in far flung areas**

Petroleum and Natural Gas Regulatory Board:

- The Petroleum and Natural Gas Regulatory Board (PNGRB) was formed under the **Petroleum and Natural Gas Regulatory Board Act, of 2006**.
- **Objective:** To protect the interests of consumers and entities engaged in specified activities relating to petroleum, petroleum products and natural gas and to promote competitive markets and for matters connected therewith or incidental thereto.
- PNGRB authorises the CGD networks, natural gas and petroleum product pipelines, determines tariffs, lays down the technical and safety standards etc.
- **Nodal Ministry:** Ministry of Petroleum and Natural Gas.

Natural Gas

- Natural gas is a **fossil fuel energy** Natural gas contains many different compounds. The largest component of natural gas is **methane**, a compound with one **carbon atom** and four hydrogen atoms (CH<sub>4</sub>).
- Natural gas also contains smaller amounts of natural gas liquids (NGLs, which are also hydrocarbon gas liquids), and nonhydrocarbon gases, such as carbon dioxide and water vapour.

How natural gas form

- Millions to hundreds of millions of years ago, the **remains of plants and animals** (such as diatoms) built up in thick layers on the earth's surface and ocean floors, sometimes mixed with sand, silt, and calcium carbonate.
- Over time, these layers were **buried under sand, silt, and rock**.
- **Pressure and heat changed** some of this carbon and hydrogen-rich material into coal, some into oil (petroleum), and some into natural gas.

**Kolkata Man Infected By Killer Plant Fungus Chondrostereum Purpureum, In World's First Such Case**

Chondrostereum Purpureum:

- It is a **plant fungus** that causes **silver leaf disease in plants**, particularly those in the rose family.
- It is commonly **found in temperate regions of the northern and southern hemispheres**.
- It **attacks most species of the rose family** Rosaceae, particularly the genus Prunus.
- It is **often found on old stumps and dead wood**, but can also be a serious parasite of living trees.
- The disease is progressive and **often fatal**.

- It is **spread by airborne spores** landing on freshly exposed sapwood.

### Powerful 'X-class' solar flare slams Earth, causes radio blackouts. There could be more.

- The X1.2 flare erupted from sunspot AR3256 near the southwestern limb of the star in our Solar System.
- It led to a strong shortwave radio blackout in south-east Asia, Australia, and New Zealand

#### Solar Flare

- **What is it?** Solar storms are **magnetic plasma** ejected at great speed from the solar surface.
- They occur during the **release of magnetic energy** associated with sunspots ('dark' regions on the Sun that are cooler than the surrounding photosphere), and can last for a few minutes or hours.
- There are **4 classes** of solar flares **B, C, M, and X** and these are classified on a **logarithmic scales** similar to the Richter scale.
- The class denotes the strength of the flare and the number that comes after it signifies their strength at a finer scale.
- Each class is therefore divided into 9 subdivisions. For example, X1 to X9.

#### Impacts of Solar Flares

- Solar flares can impact radio communications, electric power grids, and navigation signals, and pose risks to spacecraft and astronauts.
- X-class flares can trigger planet-wide radio blackouts and long-lasting radiation storms.

### IISc Bangalore device can help power streetlights

- The researchers from IISc's Department of Instrumentation and Applied Physics (IAP), fabricated their supercapacitor using **'Field Effect Transistors'** or FETs as the charge collectors, instead of the metallic electrodes that are used in existing capacitors.
- Current capacitors typically use metal oxide-based electrodes, but they are limited by poor electron mobility.
- The team built hybrid FETs consisting of alternating few-atoms-thick layers of **molybdenum disulfide (MoS<sub>2</sub>) and graphene** – to increase electron mobility – which are then connected to gold contacts.
- This news device can potentially be used in many appliances ranging from streetlights to consumer electronics, electric cars, etc.

#### Supercapacitors

- A supercapacitor is a next-generation energy storage device which is also known as an ultracapacitor.
- It has advantages such as **high-power density, long durability, and ultrafast charging** characteristics as compared to conventional capacitors and Lithium-Ion batteries (LIB).
- The main components of supercapacitors include an **electrode, electrolyte, separator, and current collector**.
- The fabrication cost of electrode materials, as well as electrolytes, should be reduced because these two components account for a major portion of the device manufacturing cost.
- An **electrode** is a solid electric conductor that carries electric current into non-metallic solids, liquids, gases, plasmas, or vacuums.
- An **electrolyte** is a substance that produces an electrically conducting solution when dissolved in a polar solvent, such as water.

### Twitter open-sources recommendation algorithm code

Open source code:

- Open source is a term that originally referred to **open source software (OSS)**.
- Open source software is code that is designed to be **publicly accessible**—anyone can **see, modify, and distribute the code** as they see fit.
- Open-source software is developed in a **decentralized and collaborative way**, relying on peer review and community production.

Source code

- It is the set of **instructions and statements** written by a programmer using a computer programming language.
- This code is later translated into **machine language** by a compiler. The translated code is referred to as object code.
- Source code is the source of a computer program.
- It contains declarations, instructions, functions, loops and other statements, which act as **instructions for the program on how to function**.
- Programs may contain **one or more source code text files**, which can be stored on a computer's hard disk, in a database, or printed in books of code snippets.

Closed-source software

- It is software in which the public is not given access to the source code, so they can't see or modify it in any way.

**Two-drug combination may offer a new way to treat inflammatory bowel diseases, study suggests**

Crohn's Disease:

- It is a type of **inflammatory bowel disease (IBD)**.
- It is a **chronic**, or long-term **condition that causes inflammation in the digestive tract**.
- **Causes:** It is **not clear** what causes Crohn's disease. Experts **suggest that it may stem from an abnormal reaction of the immune system**.
- Although it **typically starts in childhood** or early adulthood, Crohn's disease **can develop at any age**.
- **Inflammation** caused by Crohn's disease **can involve different areas of the digestive tract** in different people, most commonly the small intestine.
- **Symptoms:** The most common symptoms of Crohn's disease are **diarrhoea, cramping and pain** in your abdomen, **anaemia**, altered appetite, and **weight loss**.
- **Treatment:** There's **no known cure for Crohn's disease**, but **therapies** can greatly **reduce its signs and symptoms**.

**What is Hikikomori, the phenomenon that has 1.5 million Japanese living in isolation?**

- It is a term used to **describe people who have withdrawn from society**, often for a period of six months or longer.
- It is **associated with feelings of anxiety, depression**, and social phobia.
- It is thought to be a **response to the pressures of modern society**, including high academic expectations, intense competition, and social isolation.
- **Effects:**
  - It can **lead to further mental health problems**, including depression and anxiety, and can make it difficult for individuals to reintegrate into society.
  - Hikikomori can **also have long-term effects on individuals' social and economic prospects**, making it harder for them to find work or form relationships.
  - Hikikomori can **lead to reduced productivity** and can make it harder for individuals to contribute to the wider economy.
  - It can also **exacerbate demographic challenges**, including an aging population and a declining birth rate.

**Indian National Centre for Ocean Information Services deploys two more deep sea gliders into Bay of Bengal to study climate change**

- Slocum gliders are a type of autonomous underwater vehicle (AUV) that are capable of carrying out long-duration missions, spanning several months or even years, to collect scientific data from the ocean.
- **Objective:** To study the **physical and biogeochemical parameters** of the sea and get an insight into **climate change**.
- **Features of the gliders**
  - The state-of-the-art gliders are equipped with **sensors to track temperature, salinity, chlorophyll, dissolved oxygen, and PAR** – photosynthetic active

- radiation in the seawater among others.
- The gliders have been deployed from the Ocean Research Vehicle '**Sagar Manjusha**' of the National Institute of Ocean Technology (NIOT) off the Chennai coast outside of the EEZ - exclusive economic zone boundary
- These gliders can go underwater **up to a depth of about 1,000 metres** and will surface four to five times a day.
- These gliders which **run on the lithium-ion battery** is they come with an extended battery life of nine months and more to cover both the north and south transect of the **Bay of the Bengal**.
- They can travel up to 15 km a day.
- The project comes under the '**Deep Ocean Mission** of the **Ministry of Earth Science**

## INCOIS

- It was established as an autonomous body in 1999 under the **Ministry of Earth Sciences** (MoES).
- **Mandate:** To provide the best possible ocean information and advisory services to society, industry, government agencies and the scientific community through sustained ocean observations and constant improvements through systematic and focused research.

## Drug-resistant bacteria, linked to Indian eye drops, can spread person to person: Report

### Pseudomonas aeruginosa

- It is a **gram-negative rod-shaped bacteria** commonly **found in the environment**, for example in soil and water.
- It can be spread to **people in healthcare** settings through contaminated surfaces, hands, and equipment.
- It is capable of causing a **variety of infections**.
- It causes infections among immunocompromised hosts, extreme versatility, antibiotic resistance, and a wide range of dynamic defences making it an extremely challenging organism to treat in modern-day medicine.
- **Treatment:** Doctors usually prescribe antibiotics for its treatment.

## 10000 Indian genomes to be sequenced by year-end

### Genome India project:

- It is a Pan India initiative focused on the Whole Genome Sequencing of representative populations across India.
- **Goal:** The goal is to start with and executes whole genome sequencing and subsequent data analysis of 10,000 individuals representing the country's diverse

- population.
- This is a mission-mode, multi-institution consortium project, the first of its kind in India supported by the **Department of Biotechnology, Government of India.**

### Genome

- A genome is the complete set of **genetic information in an organism.**
- In living organisms, the genome is stored in long molecules of DNA called
- In humans, the genome consists of **23 pairs of chromosomes** located in the cell's nucleus, as well as a small chromosome in the cell's mitochondria.
- A genome contains all the information needed for an individual to develop and function.

### Tick-borne encephalitis detection in England

- This infection is **caused by a virus** which is a member of the family
- The virus can spread to people through **eating or drinking raw milk or cheese from infected goats, sheep, or cows.**
- It causes a range of diseases from mild flu-like illness, to severe infection in the central nervous system such as meningitis or encephalitis.
- **Symptoms:** High fever with a headache, neck stiffness, confusion or reduced consciousness.
- **Geographical Distribution:** Most of the cases were reported from eastern, central, northern and increasingly **western European countries, northern China, Mongolia, and the Russian Federation.**
- While many people infected with tick-borne encephalitis (TBE) virus do **not develop any signs**, severe diseases can affect the brain."
- For people with symptoms, the time from tick bite to feeling sick (incubation period) is usually **about 7 to 14 days** but can range from about 4 to 28 days.
- **Treatment:** There are 4 widely used vaccines of assured quality available namely
  - **FSME-Immun and Encepur:** Manufactured in Austria and Germany respectively, and based on European strains of the virus
  - **TBE-Moscow and EnceVir:** Manufactured in the Russian Federation and based on Far-Eastern strains.
- As per the World Health Organisation, approximately 10,000–12,000 clinical cases of tick-borne encephalitis are reported each year.

### On the road ahead for the LIGO-India project

- Laser Interferometer Gravitational-wave Observatory (LIGO)
  - LIGO is the **world's most powerful observatory** that exploits the physical properties of light and of space itself to **detect and understand the origins of gravitational waves.**
  - **At the moment, there are two such observatories in the US** that are separated by a distance of 3000 kilometres that work in tandem to pick up

- these gravitational waves.
- **Each LIGO detector consists of two arms, each 4 kilometres long, comprising 2-meter-wide steel vacuum tubes arranged in an "L" shape and covered by a 10-foot wide, 12-foot tall concrete shelter that protects the tubes from the environment.**
- **LIGO-India Project**
  - LIGO-India will be an **advanced gravitational-wave observatory** to be **located in Maharashtra, India**, as part of a worldwide network.
  - It is envisaged as a **collaborative project between a consortium of Indian research institutions and the LIGO Laboratory in the USA**, along with its international partners.
  - It will be **built by the Department of Atomic Energy and the Department of Science and Technology**, with a memorandum of understanding (**MoU**) with **the National Science Foundation, the US**, along with several national and international research and academic institutions.
  - LIGO-India is a **collaboration between the LIGO Laboratory (operated by Caltech and MIT in the US) and three Institutes in India**: the Raja Ramanna Center for Advanced Technology (RRCAT, in Indore), the Institute for Plasma Research (IPR in Ahmedabad), and the Inter-University Centre for Astronomy and Astrophysics (IUCAA, in Pune).
  - **Significance**: The information gathered by LIGO India could be used in the **field of gravitation, relativity, astrophysics, cosmology, particle physics, and nuclear physics.**

### Gravitational Wave

- It is an **invisible (yet incredibly fast) ripple in space.**
- They travel at the **speed of light.**
- These waves **squeeze and stretch anything** in their path as they pass by.
- **Albert Einstein predicted** the existence of gravitational waves in 1916 **in his general theory of relativity.**
- Einstein's mathematics showed that **massive accelerating objects** (such as neutron stars or black holes orbiting each other) **would disrupt space-time in such a way that 'waves' of undulating space-time would propagate in all directions away from the source.**

### Eight govt entities hit by info-stealing malware

#### Raccoon Stealer:

- It is a kind of **malware that steals various data from an infected computer.**
- It is a **classic example of information-stealing malware, which cybercriminals typically use to gain possession of sensitive data** saved in users' browsers and cryptocurrency wallets.
- **In the case of browsers, targeted data typically includes cookies**, saved login details, and saved credit card details.
- **In the case of cryptocurrency wallets** (henceforth, 'crypto-wallets'), **targeted data**



- **typically includes public keys, private keys, and seed phrases**
- Once sensitive browser and crypto-wallet data is in the hands of cybercriminals, it will likely be used to conduct harmful activities, such as identity theft, cryptocurrency theft, and credit card fraud.
- Like most info-stealers, **Raccoon Stealer is purchasable.**
- **The operators of Raccoon Stealer sell Raccoon Stealer samples to their customers** (called 'affiliates'), **who then use the info-stealer to gain possession of sensitive data** saved on users' devices.

### Country's first 3D-printed post office coming up in Bengaluru

- Cambridge Layout in Ulsoor, **Bangalore.**
- It is being **implemented by Larsen & Toubro**, which has experience in constructing 3D-printed buildings.
- It is a **1,100 sqft building** which is expected to **cost 30-40 per cent less than conventional buildings** because of the technological intervention.
- It is being built at a **cost of Rs 23 lakh.**

### 3D-printing

- 3D printing or **additive manufacturing** is a process of **making three-dimensional solid objects from a digital file.**
- The creation of a 3D printed object is **achieved using additive processes.**
- **In an additive process, an object is created by laying down successive layers of material** until the object is created. Each of these layers can be seen as a thinly sliced cross-section of the object.
- 3D printing **enables you to produce complex shapes** using less material than traditional manufacturing methods.

### Astronomers used machine learning to mine data from South Africa's MeerKAT telescope

- It is situated in **South Africa's Northern Cape province** and is a precursor to the Square Kilometre Array (SKA) telescope.
- It was originally known as **the Karoo Array Telescope (KAT)** which would consist of 20 receptors.
- At present, it is **having an array of 64 interlinked receptors.**
- It uses **radio signals** from space to study the **evolution of the universe** and everything it contains.
- Astronomers used a coding **framework called Astronomoly** and found **Odd Radio Circle**, which they named SAURON (a Steep and Uneven Ring Of Non-thermal Radiation).

### Odd Radio Circles

- These are very large **mysterious objects** that are highly circular and bright along the edges at radio wavelengths.
- Although ORCs are bright at radio wavelengths, they cannot be observed at visible, infrared or X-ray wavelengths.

#### Machine learning

- It is a branch of **artificial intelligence** (AI) and computer science which focuses on the use of **data and algorithms** to imitate the way that humans learn, gradually improving its accuracy.

#### NM-ICPS Mission can accelerate technology translation and commercialization through TIHs spanning all over the country

##### National Mission in Interdisciplinary Cyber-Physical Systems:

- It was launched in 2018 at a total outlay of Rs.3660 Crores for **a period of five years**.
- **Objectives:** It is comprehensive mission to **address technology development**, application development, human resource development & skill enhancement, entrepreneurship and start-up development in CPS and associated technologies.
- As part of the Mission implementation, **25 Technology Innovation Hubs** (TIHs) have been established in advanced technologies in reputed institutes across the country.
- **Nodal Ministry:** It is being implemented by Department of Science & Technology under the **Ministry of Science and Technology**

#### Cyber-physical system

- It combines **digital/cyber elements with physical objects** (e.g. machines, autonomous vehicles) and data with capabilities of communication, data collection & processing, computing, decision making and action
- It is an integrated system **involving Sensors**, Communication, Actuators, Control, interconnected computing networks and data analytics.

#### In pursuit of a 'magic number', physicists discover new uranium isotope

- It has an atomic number of 92 and a mass number of 241.
- The researchers also calculated that uranium-241 likely has a **half-life of just 40 minutes**.

#### uranium-241

- The researchers **accelerated uranium-238 nuclei into plutonium-198** nuclei at the KEK Isotope Separation System (KISS).
- In a process called multinucleon transfer, the two isotopes exchange protons and

neutrons. The resulting nuclear fragments contained different isotopes.

## Uranium

- It was discovered in 1789 by Martin Klaproth, a German chemist.
- It is a **silvery-white metallic chemical element** in the periodic table, with atomic number 92.
- It has the **highest atomic weight** of all naturally occurring elements.
- It occurs naturally in low concentrations in soil, rock and water, and is commercially extracted from uranium-bearing minerals such as uraninite.
- Uranium ore can be mined from open pits or underground excavations.
- The ore can then be crushed and treated at a mill to separate the valuable uranium from the ore.
- Uranium may also be dissolved directly from the ore deposits in the ground (in-situ leaching) and pumped to the surface.

## New low-cost substrates can enhance sensitivity of analytical tools for detecting toxic pollutants

- Scientists have developed a **new low-cost substrate** that can increase the sensitivity of Surface-enhanced Raman spectroscopy (SERS) -- a vital analytical and sensing tool for detecting molecules.
- The substrate is based on the unique **sea urchin morphology of molybdenum trioxide** for the rapid detection of **industrial pollutants**.

## Raman spectroscopy

- It was discovered by C.V. Raman in 1928 to study the **vibrational, rotational, and low-frequency modes of the molecules**.
- **Principle:** The principle behind Raman spectroscopy is that the **monochromatic radiation** is passed through the sample such that the radiation may get **reflected, absorbed, or scattered**.
- The scattered photons have a different frequency from the incident photon as the vibration and rotational properties vary.
- **Types of Raman Spectroscopy are**
  - Resonance Raman Spectroscopy (RRS)
  - Surface-enhanced Raman Spectroscopy (SERS)
  - Micro-Raman Spectroscopy
  - Non-linear Raman Spectroscopic Techniques

## Substrate

- A substrate can be **the surface on which an organism** (eg: plant, fungus, or animal) lives or the substance on which an enzyme can act.

## Einstein was right about invisible dark matter, massive new map of the universe suggests

- Researchers from S. National Science Foundation's (NSF) used the **Atacama Cosmology Telescope to create this new map of the dark matter.**
- The new image, made using 14 billion-year-old light from the turbulent aftermath of the Big Bang, shows the enormous matter tendrils that formed not long after the universe exploded into being.
- It turns out the shapes of these tendrils are remarkably **similar to those predicted using Einstein's theory of general relativity.**
- The new result contradicts previous dark matter maps that suggested the cosmic web is less clumpy than Einstein's theory predicted.

Dark Matter:

- **What is it?** Dark matter is a **hypothetical invisible mass** thought to be **responsible for adding gravity to galaxies** and other bodies.
- **How much is dark matter?**
  - According to NASA, **Dark matter seems to outweigh visible matter roughly six to one**, making up about **27% of the universe.**
  - Roughly **68% of the universe is dark energy.** Dark matter makes up about 27%. The rest visible matter is 5% of the universe.
- **Why called dark matter?** It is called so because unlike normal matter (i.e. stars and galaxies), **dark matter does not interact with the electromagnetic force.**
- **Detection:** As it does not interact with the electromagnetic force, thus **it does not absorb, reflect or emit light or electromagnetic radiation of any kind.** And this makes it **extremely hard to spot/detect. It can be detected only through its gravitational effects.**
- **Importance:** Its gravitational force prevents stars in our Milky Way from flying apart.
- **\*\*The Atacama Cosmology Telescope:\*\***The telescope was commissioned at its site in **late 2007.**It is a six-meter diameter telescope on Cerro Toco in the **\*\*Atacama Desert** of northern Chile.**\*\*Its goal** is to study how the universe began, what it is made of, and how it evolved to its current state.

## Delegation from IRRI Philippines visits PAU to discuss rice project

International Rice Research Institute (IRRI):

- IRRI is an **independent, nonprofit, research and educational institute, founded in 1960** by the Ford and Rockefeller foundations with **support from the Philippine government.**
- It is the **world's premier research organization dedicated to reducing poverty, hunger, and malnutrition through rice science.**
- It **aims to improve the health and welfare** of those **who depend on rice-based agri-food systems**, and promote and protect the environmental sustainability of rice farming for future generations.

- **Headquarters: Los Baños, Philippines.**
- It has **offices in 17 rice-growing countries in Asia and Africa**, and more than 1,000 staff.
- IRRI's **work is supported by a diverse network of investors** aligned to common goals.
- IRRI's research for development is characterized by its **collaborative nature**: from **alliances with advanced research institutes; through strong collaborations** and capacity development **with governments** and national agricultural research and extension systems.

### What is magnetoresistance? It's one more thing graphene does differently

- It is the result of the electrical resistance of a conductor affected by magnetic fields in adjacent materials.
- It is used in hard disk drives and magneto resistive RAM in computers, biosensors, automotive sensors, microelectromechanical systems, and medical imagers etc.

### Graphene

- It is composed of monolayer of closely packed **carbon atoms** that form a **hexagonal honeycomb lattice**.
- It is the building-block of **Graphite**.
- It is the **thinnest, most electrically and thermally conductive** material in the world.
- It is also tremendously strong—about 200 times stronger than steel and flexible, as well as transparent.
- It is also known as a wonder material due to its vast potential in the energy and medical world.

### Here's why Visakhapatnam beaches are glowing a shimmering blue

#### Bioluminescence

- Bioluminescence occurs due to the presence of some **marine planktons** called **dinoflagellates** that produce light when the water is disturbed.
- These planktons emit light on the ocean surface at night.
- Bioluminescent is widespread among deep sea animals in general.
- Many marine creatures **like sponges, jellyfish, worms, species of fish, anthropods, echinoderms and unicellular alga** exhibit bioluminescence to either **evade predators, attract prey** or during mating.
- In Visakhapatnam, this phenomenon is most likely the result of an algal bloom of the dinoflagellate species of noctiluca and ceratium.
- This occurs when the **luciferase enzyme reacts with luciferin** compound in the presence of oxygen to produce a cold light.
- This is **widespread in lagoons and sometimes breakwaters** and is particularly visible during warm weather conditions.

- The dinoflagellates follow a circadian cycle (24-hour cycle) and as a result this phenomenon occurs during the night which is visible in low light conditions.
- This unique phenomenon has been visible in some other beaches in India including **Havelock Island** in the Andamans, **Thiruvanmiyur beach** in Chennai, **Mattu beach** in Karnataka and **Bangaram Island** in Lakshadweep.

#### Planktons

- Plankton are a group of **marine and freshwater organisms** that drift along ocean currents because they are too small or weak to swim against them.
- Their name comes from the Greek word planktos which means "wandering."
- The range in size from **2 micrometers to more than 20 centimeters**.
- There are **two types** of plankton: **phytoplankton**, which are tiny plants, and **zooplankton**, which are tiny animals.

#### [DST Institute to partner Indian Navy in developing secure maritime communications using Quantum Technology](#)

##### Raman Research Institute (RRI):

- It is an **autonomous research institute** engaged in **research in basic sciences**.
- **Location: Bangalore**
- The institute was **founded in 1948** by the Indian physicist and **Nobel Laureate Sir C V Raman**, with **funds from private sources**.
- It was restructured in **1972 to become an aided autonomous institute receiving funds from the Department of Science and Technology** of the Government of India.
- The institute is **administered by a Governing Council**.
- Today, the **main areas of research** at the Institute are Astronomy & Astrophysics, Light & Matter Physics, Soft Condensed Matter, and Theoretical Physics.

##### Quantum Technology

- It is based on the **principles of Quantum mechanics** (including **quantum entanglement and quantum superposition**) **developed in the early 20th century to describe nature at the scale of atoms** and elementary particles.
- **Quantum entanglement** is known to be the **exchange of quantum information between two particles at a distance**, while **quantum superposition** is known to be the **uncertainty of a particle (or particles) being in several states at once** (which could also involve the exchange of quantum information for a particle that is known to be in several locations simultaneously).

#### [Heatstroke deaths in Mumbai](#)

- The deaths of 11 people in Mumbai on Sunday (April 16), apparently due to

heatstroke, while they were attending a government meeting in an open space, is possibly the largest heatwave-related death toll from a single event.

- According to the IMD, heatwave conditions are currently prevailing in some areas of Gangetic West Bengal, coastal Andhra Pradesh and Bihar. In most parts of Mumbai, maximum temperatures on Sunday were in the range of 30-35 degrees Celsius.

#### Wet bulb temperature

- High temperatures in themselves are often not fatal. The combination of high temperature and high humidity, referred to as the “wet bulb temperature”, is what makes heatwaves deadly. Information on wet bulb temperatures in Mumbai on Sunday was not immediately available.
- Humidity is a critical factor in heat exposure because high humidity does not allow sweat to evaporate off the surface of the skin, the primary way in which humans lose the heat generated within the body. The cooling effect that the evaporating sweat produces is essential in maintaining a stable body temperature. Also, the resilience of people to heatwaves varies with age and depends on underlying health conditions.
- The summer this year is predicted to be excessively hot because of the end of the La Nina phase in the equatorial Pacific Ocean, something that has a general cooling effect on the Earth's atmosphere. New forecasts suggest that El Nino, which has the opposite impact of La Nina, is likely to kick in from the May-July period itself, earlier than expected.

#### Union Cabinet gives nod for ₹6,003 crore Quantum Mission

- The Union Cabinet on Wednesday approved the ₹6,003 crore National Quantum Mission (NQM) that will fund research and development of quantum computing technology and associated applications.
- The mission will help develop **magnetometers** with high sensitivity in atomic systems, atomic clocks for precision timing, communications and navigation. Fabrication of quantum materials such as superconductors, novel semiconductor structures, and topological materials for fabrication of quantum devices.
- “Four Thematic Hubs (T-Hubs) would be set up in top academic and National R&D institutes on the domains of ‘**quantum computing**’, ‘**quantum communication**’, ‘**quantum sensing and metrology**’ and ‘**quantum materials and devices**’.
- “Only six countries so far have some capability in this domain. This mission will bring India to the forefront along with them, and India can be a world leader,”

#### Quantum Computing

- Quantum computing is a **rapidly-emerging technology that harnesses the laws of quantum mechanics** to solve problems too complex for classical computers.
  - Quantum mechanics is a subfield of physics that describes the behavior of

particles — atoms, electrons, photons, and almost everything in the molecular and submolecular realm.

- It is an exciting **new technology that will shape our world tomorrow** by providing us with an edge and a myriad of possibilities.
- It is a fundamentally **different way of processing information** compared to today's classical computing systems.
- Features:
  - **Different from Traditional Computers:**
    - While today's **classical computers store information as binary 0 and 1 states**, **quantum computers** draw on the fundamental laws of nature to **carry out calculations using quantum bits**.
    - Unlike a bit that has to be a 0 or a 1, a **qubit can be in a combination of states**, which allows for exponentially larger calculations and **gives them the potential to solve complex problems** which even the most powerful classical supercomputers are not capable of.
  - **Significance:**
    - Quantum computers can tap into the quantum mechanical phenomenon to **manipulate information and are expected to shed light on processes of molecular and chemical interactions**, address difficult optimization problems, and boost the power of artificial intelligence.
    - These could **open the door to new scientific discoveries**, life-saving drugs, and improvements in supply chains, logistics and the modelling of financial data.

### Microbes at the top of the world

- Recently researchers examines the human microbiota on the inhospitable slopes of Mount Everest. They were able to collect microbial communities in sediment samples left by human climbers on the South Col of Mount Everest, 7,900 metres above sea level (msl).
- The South Col is the ridge which separates Mt. Everest from Lhotse — the fourth highest mountain on earth.
- But microbes keep arriving, carried by either birds, animals, or winds. Up to about 6,000 msl, dust particles, less than 20 micrometre in diameter, are blown in by the winds.
- Using sophisticated methods such as 16S and 18S rRNA sequencing, the microbe hunters were able to identify the bacteria and other microorganisms found on the South Col. A cosmopolitan human signature is seen in the microbes collected here. Also found are *modestobacter altitudinis* and the fungus, *naganishia*, which are known to be UV-resistant survivors.

### From the Past

- In 1847, Andrew Waugh, British Surveyor General of India, found a peak in the eastern end of the Himalayas which was higher than the Kangchenjunga — considered as the highest peak in the world at that time. His predecessor, Sir George Everest, was interested in high-altitude hills and had deputed Waugh to take charge.



- In true colonial spirit, Waugh called it the Mount Everest.
- The Indian mathematician and surveyor, Radhanath Sikdar, was an able mathematician. He was the first person to show that Mount Everest (then known as peak XV) was the world's highest peak.
  - George Everest had appointed Sikdar to the post of 'Computer' in the Survey of India in 1831.
  - In 1852, Sikdar, with the help of a special device, recorded the height of 'Peak 15' at 8,839 metres. However, it was officially announced in March 1856.

### Gsk Pharmaceuticals Launches Its Shingles Vaccine In India

Shingles disease:

- It is caused by the **varicella-zoster virus** the same virus that causes chickenpox.
- It can occur anywhere in the human body.
- It typically looks like a single stripe of blisters that wraps around the left side or the right side of your torso.
- It is **not contagious** means it can't be spread from one person to another.
- The risk of shingles goes up as **you get older** and it is most common in people over age 50.
- **Symptoms:** Pain, burning, tingling sensitivity to touch etc.
- There is a **vaccine called Shingrix** available which helps in preventing shingles and its complications.

other issues

- **Postherpetic neuralgia (PHN)** is the most common complication of shingles. It causes severe pain in the areas where you had the shingles rash.
- **Vision loss:** It can happen if shingles affect the eyes. It may be temporary or permanent.
- **Hearing or balance problems** are possible if you have shingles within or near your ear. You may also have weakness in the muscles on that side of your face. These problems can be temporary or permanent.

### WHO flags contaminated cough syrup made in India

The World Health Organization (WHO) said that contaminated cough syrup made by an Indian company had been found on the Marshall Islands and in Micronesia.

Marshall Islands were analysed by quality control laboratories of the Therapeutic Goods Administration of Australia. The analysis found that the product contained unacceptable amounts of diethylene glycol and ethylene glycol as contaminants.

Diethylene glycol and ethylene glycol are toxic to humans when consumed, and can prove

fatal.

- Diethylene glycol (DEG) and ethylene glycol (EG) are **often found as contaminants in glycerin**, which is **used as a sweetener in the manufacture of pharmaceutical cough syrups**.
- DEG and EG **both have similar physical properties** (colourless, odorless and viscous). They are also used in industrial products such as paints, stationery inks, fluids used in brakes and clutches of vehicles, and antifreeze.

### The BCG vaccine, did not provide any significant protection against Covid-19 infection

The BCG vaccine, typically administered to prevent tuberculosis, did not provide any significant protection against Covid-19 infection to healthcare workers, a new study said.

- The clinical trial to repurpose the BCG vaccine against Covid-19 started during the early days of the pandemic when there were fewer ways to treat Covid-19.
- The BCG vaccine has existed for over 80 years and is part of India's Universal Immunisation Programme.
- The vaccine, containing weakened strains of *Mycobacterium tuberculosis*, is administered to fight against tuberculosis, meningitis and other respiratory tract infections, according to another study.
- The current study was supposed to have 10,000 participants from five countries and continue for 12 months, but was stopped once mRNA vaccines were developed.
- The paper reported the results of a trial where 4,000 adults were observed over six months.

Bacillus Calmette–Guérin (BCG) vaccine:

- It is a **vaccine for tuberculosis (TB)**
- The vaccine was **developed by Calmette and Guerin** and was **first administered to human beings in 1921**.
- It is the most **widely administered vaccine** and is usually a **part of the routine newborn immunization schedule**.
- BCG vaccine **also offers protection against non-tuberculous mycobacterial infections** like leprosy and Buruli ulcer.
- It is often **given to infants and small children**.
- It is **rarely given to anyone over the age of 16** because there is little evidence it works very well in adults.

### Sun halo spotted in Prayagraj leaves many awe-inspired.

The skies of Uttar Pradesh's Prayagraj were graced by an awe-inspiring phenomenon on Friday. Sun halo or the "22 degree halo" was seen in the city by many. The mysterious ring was seen for a few hours.

### Sun halo:

- It is an optical phenomenon that occurs **due to sunlight refracting millions of hexagonal ice crystals** suspended in the atmosphere.
- When white light passes through **unique hexagonal ice crystals** found in **upper-level cirrus clouds**, causing the halo to have colours.
- The clouds contain millions of tiny ice crystals, which refract, split and even reflect the light to give an impression of a circular rainbow ring.
- The crystals have to be oriented and positioned just so with respect to your eye, for the halo to appear.
- Light undergoes **two refractions** as it passes through the ice crystals and the bending that occurs depends on the ice crystal's diameter.
- The two refractions **bend the light by 22 degrees** from its original point, producing a ring of light around the Sun or the Moon.
- The **lunar halos** are mostly colourless as moonlight is not very bright.
- In the case of the Sun, these colours are more noticeable and appear as bright as a rainbow.

### Can psychedelics treat depression?

- Psychedelics are a group of drugs that alter perception, mood, and thought processing while a person is still clearly conscious. Usually, the person's insight also remains unimpaired.
- Psychedelics are non-addictive and non-toxic. Compared to illicit drugs, psychedelics cause much less harm to the end user.
- The two most commonly used psychedelics are **d-lysergic acid diethylamide (LSD)** and **psilocybin**. Less common ones include **mescaline**, found in the North American peyote cactus (*Lophophora williamsii*), and N,N-dimethyltryptamine, the principal component of the South American ceremonial sacrament ayahuasca.
- Researchers have also developed **synthetic psychedelics**. **Ketamine** a dissociative anaesthetic with psychedelic properties is used under strict medical supervision for **anaesthesia and to treat treatment-resistant depression**.
- In India, the Narcotic Drugs and Psychotropic Substances Act 1985 prohibits the use of psychedelic substances. **Ketamine**, a dissociative anaesthetic with psychedelic properties, is used under strict medical supervision, for anaesthesia and to treat treatment-resistant depression.

### How do psychedelic substances work inside the body?

- Classical psychedelics boost brain serotonin levels. Psilocybin's therapeutic effects require a 'trip' that is mediated by the activation of serotonin receptors. A case report published demonstrated that robust and sustained antidepressant effects can occur even in the absence of psilocybin's psychedelic effects. This finding, if replicated in larger trials, will have major implications for people with treatment-resistant depression.
- About half of the ingested psilocybin is absorbed via the digestive tract. In the body, psilocybin is converted to **psilocin**, which is then metabolised in the liver. LSD is

- completely absorbed in the digestive tract and then metabolised in the liver.
- Modern neuroimaging suggests that psychedelics are neither stimulants nor depressants of brain activity. Instead, they increase the cross-talk between different brain networks, and this correlates with the subjective effects of psychedelics.

#### Narcotic Drugs and Psychotropic Substances Act 1985

- It was enacted in 1985 and **deals with drugs and their trafficking** in the country.
- The act has since been **amended thrice in 1988, 2001, and 2014**.
- It was passed to meet India's global treaty obligations under the Single Convention on Narcotic Drugs, Convention on Psychotropic Substances and United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances.
- The Act **prohibits the production**, manufacture, sale, purchase, transportation & consumption of many narcotic drugs or psychotropic substances, including cannabis, heroin, opium etc. The law, however, does not apply to bhang.
- Anyone who violates the NDPS Act faces **punishment based on the quantity** of the banned substance.
- The **maximum punishment** that can be given under this Act is the death penalty. However, the death penalty can **only be given to repeat offenders**, at the discretion of a judge.
- It allows courts to release an addict for treatment if found guilty of consumption of drugs.

#### Narcotics Control Bureau

- It works under the **Union Ministry of Home Affairs**.
- The agency is tasked with coordinating with state governments and other authorities, under NDPS Act, Customs Act, Drugs and Cosmetics Act and any other law, for the enforcement of provisions of the NDPS Act.

#### Despite availability of funds, patients with rare Fabry Disease yet to be given treatment, says support society

##### Fabry Disease:

- It is a **rare inherited disorder** of glycosphingolipid (fat) metabolism resulting from the absent or markedly deficient activity of the lysosomal enzyme, **alpha-galactosidase A ( $\alpha$ -Gal A)**.
- It belongs to a group of diseases known as **lysosomal storage disorders**.
- This enzymatic deficiency is **caused by** alterations (mutations) in the  **$\alpha$ -galactosidase A (GLA) gene** that instructs cells to make the  $\alpha$ -galactosidase A ( $\alpha$ -Gal A) enzyme.
- Lysosomes function as the primary digestive tract of cells.
- **Symptoms:** Numbness, tingling, burning or pain in the hands or feet, extreme pain during physical activity and heat or cold intolerance etc.
- The types of Fabry disease
  - **\*\*Classic type:\*\*** Symptoms of this type appears **during childhood** or the

- teenage years. It may be noticeable as early as age two.
- **Late-onset/atypical type:** People with late-onset Fabry disease don't have symptoms **until they're in their 30s or older.**
- The first indication of a problem may be kidney failure or heart disease.
- **Treatment:** The patients are treated by intravenously administered **enzyme replacement therapy (ERT)** or Oral Chaperone Therapy

### Lysosomes

- These are simple tiny spherical **sac-like structures present in the cytoplasm.**
- These **are membrane-enclosed organelles** that contain an array of enzymes capable of breaking down all types of biological polymers—proteins, nucleic acids, carbohydrates, and lipids.
- These function as **the digestive system of the cell**, serving both to degrade material taken up from outside the cell and to digest obsolete components of the cell itself.

## DEFENCE & SPACE

### ISRO's Reusable Launch Vehicle aces landing test

- An Indian Air Forces (IAF) **Chinook helicopter** was used to drop the RLV-TD from a 4.5 km altitude and ISRO executed the landing experiment of the RLV-TD as planned.
- The release of this vehicle was autonomous as it performed approach and landing manoeuvres using **Integrated Navigation, Guidance**, and control system and completed an **autonomous landing on the airstrip**
- It is the **first in the world**; a **winged body** has been carried to an altitude of 4.5 km.
- It is the second in the series of experimental flights of the programme.

### Reusable Launch Vehicle-Technology Demonstration

- This programme is planned as a series of technology demonstration missions that have been considered as a first step towards realising a Two Stage To Orbit (TSTO) fully reusable vehicle.
- A Winged RLV-TD has been configured to act as a flying test bed to evaluate various technologies namely, **hypersonic flight, autonomous landing, and powered cruise flight**.
- These technologies will be developed in phases through a series of experimental flights.
- RLV-TD is similar to that of an aircraft and **combines** the complexity of **both launch vehicles and aircraft**.
- **Features of RLV-TD**
  - It consists of a **fuselage** (body), a nose cap, double delta wings, and twin vertical tails.
  - It also features symmetrically placed **active control surfaces called Elevons and Rudder**.
- RLV-TD was successfully flight tested on May 23, 2016, from Sriharikota validating the critical technologies such as autonomous navigation, guidance and control, reusable thermal protection system, and re-entry mission management.
- During this mission, the vehicle landed on a **hypothetical runway over the Bay of Bengal**.

### India-U.S. air exercise 'Cope India' to begin next week, Japan to be observer

- It is a **bilateral joint exercise** between **Indian Air Force (IAF)** and the **United States Air Force (USAF)**.
- Cope India **began in 2004** as a fighter training exercise.
- The exercise has **evolved to incorporate subject matter expert exchanges, air mobility training**, airdrop training and large-force exercises, in addition to fighter-training exercises.
- The exercise will further **enhance operational capability and interoperability** between the two air forces..

- The **last edition of the exercise was held in 2019.**

### Russia to form special division of Poseidon torpedo carriers, TASS reports

Poseidon Torpedo:

- It is a massive **Russian, nuclear-powered autonomous torpedo** armed with a **nuclear warhead** built to strike enemy coastal targets from great distances.
- **Features:**
  - It is about **65 feet long** and **6.5 feet wide**, making it the **largest torpedo** ever deployed.
  - **Speed:** It can also reach speeds of up to **70 knots, or 80 miles per hour.**
  - It is reportedly equipped with a **2-megaton thermonuclear warhead.**
  - **Range:** The use of nuclear power gives it nearly **unlimited range.**
  - It is unreachable due to its working **depth—possibly 1,000 meters (3,300 feet).**

### Indigenous Anti Tank Guided Missile, Amogha-III tested successfully

- Amogha-III is an indigenous missile which has been developed under **Integrated Guided Missile Development Programme (IGMDP).**
- It has a **fire-and-forget capability** and does not require external intervention after the launch.
- The missile also features **dual-mode Imaging Infra-Red (IIR) Seeker** systems with a **range of 200 to 2500 meters.**
- It showcases a tandem warhead, consisting of **two separate explosive charges** that are detonated in sequence.
  - The first charge, known as the **precursor charge**, penetrates the target's armour, creating a hole for the second charge, the main charge, to **detonate inside**, maximizing damage inflicted on the target.
- One of the unique features of the missile is it has **both top and direct attack modes**

### India-U.S. air exercise 'Cope India' to begin next week, Japan to be observer

- It is a **bilateral joint exercise** between **Indian Air Force (IAF)** and the **United States Air Force (USAF).**
- Cope India **began in 2004** as a fighter training exercise.
- The exercise has **evolved to incorporate subject matter expert exchanges, air mobility training, airdrop training** and large-force exercises, in addition to fighter-training exercises.
- The exercise will further **enhance operational capability and interoperability** between the two air forces..
- The **last edition of the exercise was held in 2019.**

## Russia to form special division of Poseidon torpedo carriers, TASS reports

Poseidon Torpedo:

- It is a massive **Russian, nuclear-powered autonomous torpedo** armed with a **nuclear warhead** built to strike enemy coastal targets from great distances.
- **Features:**
  - It is about **65 feet long** and **6.5 feet wide**, making it the **largest torpedo** ever deployed.
  - **Speed:** It can also reach speeds of up to **70 knots, or 80 miles per hour**.
  - It is reportedly equipped with a **2-megaton thermonuclear warhead**.
  - **Range:** The use of nuclear power gives it nearly **unlimited range**.
  - It is unreachable due to its working **depth—possibly 1,000 meters (3,300 feet)**.

## Indigenous Anti Tank Guided Missile, Amogha-III tested successfully

- Amogha-III is an indigenous missile which has been developed under **Integrated Guided Missile Development Programme (IGMDP)**.
- It has a **fire-and-forget capability** and does not require external intervention after the launch.
- The missile also features **dual-mode Imaging Infra-Red (IIR) Seeker** systems with a **range of 200 to 2500 meters**.
- It showcases a tandem warhead, consisting of **two separate explosive charges** that are detonated in sequence.
  - The first charge, known as the **precursor charge**, penetrates the target's armour, creating a hole for the second charge, the main charge, to **detonate inside**, maximizing damage inflicted on the target.
- One of the unique features of the missile is it has **both top and direct attack modes**

## India-Sri Lanka maritime exercise begins in Colombo

SLINEX - 2023:

- Exercise SLINEX is an **annual bilateral maritime exercise between Indian Navy and Sri Lanka Navy**.
- **SLINEX - 2023 is the 10th edition of the annual exercise**.
- SLINEX-2023 will aim to **enhance interoperability, improve mutual understanding and exchange best practices** and procedures in multi-faceted Maritime operations between both Navies.
- The exercise is being **conducted in two phases**, the **Harbour Phase** followed by the **Sea Phase**.
- The **Indian Navy will be represented by INS Kiltan** (Advanced Anti Submarine Warfare Corvette) and **INS Savitri** (Offshore Patrol Vessel), while the Sri Lanka Navy



will have SLNS Gajabahu (Advance Offshore Patrol Vessel) and SLNS Sagara (OPV) in the exercise.

- SLINEX is in consonance with **India's policy of 'Neighbourhood First'** and **Prime Ministers' vision of 'Security and Growth for All in the Region (SAGAR)'**.

### Skyroot Aerospace test-fires 3D-printed Dhawan II engine for record 200 seconds

Dhawan II engine:

- It is a 3D-printed cryogenic engine developed by the Skyroot Aerospace for its heavier vehicle\*\*, the Vikram II rocket.\*\*
- **Features:**
  - It uses a **3D-printed torch igniter** and bellows actuated cryo-injection valve with a quick response time.
  - It utilises two high-performance rocket propellants, **liquid natural gas (LNG)** and **liquid oxygen (LoX)**, which require cryogenic temperatures (below -150° Celsius) for storage and operation.
- **Advantage:** A cryogenic upper stage enhances the payload-carrying capacity of a rocket.
- The cryogenic engine series is named in honour of Dr Satish Dhawan, an Indian rocket scientist.

3D Printing

- 3D printing or **additive manufacturing** is a process of making three-dimensional solid objects from a digital file.
- The creation of a 3D-printed object is achieved using additive processes.
- In an additive process, an object is **created by laying down successive layers of material** until the object is created. Each of these layers can be seen as a thinly sliced cross-section of the object.
- 3D printing enables you to produce **complex shapes using less material** than traditional manufacturing methods.

### Anti-submarine rockets developed by 2 Pune labs successfully tested from INS Chennai

- It was designed and developed by Pune-based **Armament Research and Development Establishment (ARDE)** and **High Energy Materials Research Laboratory (HEMRL)**.
- It is designed to **intercept submarines at specific depths**.
- It will be **deployed in anti-submarine operations** and will be fired from an indigenised **rocket launcher mounted** onboard various **Indian naval ships**.
- It can be **fired in single or in salvo mode** depending on the tactical mission requirements
- It has been **designed to replace the existing Russian origin RGB rockets** which

- are already fitted in ships.
- While the **RGB has a range of five kilometers**, the **ER-ASR can achieve a range over eight kilometers**.
- It **consists of two motor propulsion systems** which can fire the rocket in Short Range mode and Long Range mode to achieve different range capabilities

### Joint Military Exercise 'Ex KAVACH' concludes at Andaman and Nicobar Command

- It was conducted under the **aegis of the Andaman and Nicobar Command (ANC)**, the **only Joint Forces Command in the country**.
- It was a tri-service exercise and **involved assets of the Indian Army, Indian Navy, Indian Air Force and Indian Coast Guard**.
- **Naval warships, amphibious troops of the Army** and different types of **aircraft of the Indian Air Force** were employed during the military drill.
- **Aim: To enhance operational synergy and joint warfighting capabilities** among the three services.
- The exercise involved the **synergised application of maritime surveillance assets, coordinated air and maritime strikes, air defence, submarine and landing operations**

### Europe to launch Juice mission to explore Jupiter and its icy moons on April 13

- It is a **European Space Agency (ESA) mission to explore Jupiter and three of its icy moons: Europa, Callisto and Ganymede**.
- **Objective:** The probe aims to explore the **possibilities of life in space and the origins of Jupiter**.
- The probe will take nearly **eight years to reach Jupiter**.
- It will **monitor Jupiter's complex magnetic, radiation, and plasma environment** in depth and its interplay with the moons.
- Approximately **four years after its arrival** at the Jupiter system, **JUICE will move into orbit around the gas giant's largest moon, Ganymede**, to conduct the most extensive exploration of this body, which is larger than the solar system's smallest planet, Mercury.
- It will become the **first probe to orbit a planetary moon other than Earth's**.
- **Features of the spacecraft:**
  - It has been **fuelled with mono-methyl hydrazine (MMH) fuel and mixed oxides of nitrogen (MON) oxidizer**, which ignites when the two come in contact. Juice will use this propellant to make critical course manoeuvres on its journey.
  - It will be **packed with 10 instruments** and will characterize Jupiter's ocean-bearing icy moons.
  - It will be **launched onboard the Ariane-5 rocket**, a workhorse for the European Space Agency.

**Study carried out by the researchers were able to achieve the most accurate calibration of Cepheid stars.**

Cepheid star:

- It is a type of **variable star** which **brighten and dim periodically**.
- **Variable stars** are essentially stars that **experience fluctuations in their brightness**
- **Cepheids stars** are special type of variable star in that they **are hot and massive** – five to **twenty times as much mass as our Sun** – and are known for their tendency to **pulsate radially and vary in both diameter and temperature**.
- Cepheid star's **period (how often it pulsates)** is **directly related to its luminosity** or brightness.
- They have **luminosities 500-30,000 times** greater than **that of the Sun**.
- They are **used as cosmic yardsticks out to distances** of a few **tens of millions of light-years**.

**Ningaloo 'hybrid' solar eclipse on April 20: What is it and where to watch**

- **What it is?** A hybrid eclipse is a type of **solar eclipse that looks like an annular solar eclipse or a total solar eclipse**, depending on the observer's location along the central eclipse path.
- During a hybrid solar eclipse, the Earth's curvature brings some sections of the eclipse path into the **Moon's umbra**, the darkest part of its shadow that creates total solar eclipses, while other areas remain outside the umbra's reach, causing an annular eclipse.

Total solar eclipse

- It happens when **the Moon passes between the Earth and Sun** while completely blocking the face of the Sun.
- It will be visible to the people located in the centre of the Moon's shadow when it hits Earth.
- If the weather conditions are right, people in the path of the solar eclipse will be able to see the Sun's corona (outer atmosphere).

Annular eclipse

- It happens when **the moon is farthest from the Earth**, which is why it seems smaller.
- In this type of eclipse, the **moon does not block the sun completely** but looks like a "dark disk on top of a larger sun-coloured disk" forming a "ring of fire".

Eclipse

- It happens when the **moon while orbiting the Earth, comes in between the sun and the Earth**, due to which the moon blocks the sun's light from reaching the Earth,

causing an eclipse of the sun or a solar eclipse.

### The solar system was hit with a gamma-ray burst so bright, it blinded scientists' equipment in space

- GRBs are **short-lived bursts of gamma-ray light, the most energetic form of light.**
- GRB emits **more energy in a few seconds than our Sun will emit in its lifetime** and has **two distinct emission phases**:
  - The **short-lived prompt emission** (the initial burst phase that emits gamma-rays), **followed by a long-lived multi-wavelength afterglow phase.**
- The **shortest GRBs likely mark the collision of two compact stellar remnants called neutron stars**, and the **longest bursts** are thought to arise **when a massive, rapidly spinning star collapses to form a black hole.**
- When a GRB erupts, it is **briefly the brightest source of cosmic gamma-ray photons in the observable Universe.**

#### Gamma Rays

- Gamma rays have the **smallest wavelengths** and the **most energy of any wave in the electromagnetic spectrum.**
- They are **produced by the hottest and most energetic objects in the universe**, such as neutron stars and pulsars, supernova explosions, and regions around black holes.
- On Earth, gamma waves are generated by nuclear explosions, lightning, and the less dramatic activity of radioactive decay.

### Indian Navy conducts exercise 'Prasthan' off Mumbai coast

- The exercise is **held every six months** under the **aegis of the Indian Navy** and involves the **participation of all stakeholders in the maritime domain.**
- This exercise is an important element of **ensuring offshore security** and aims to integrate the efforts of all maritime stakeholders involved in **offshore defence.**
- The **recent exercise aims** to validate measures and procedures to **address contingencies that may occur in oil production platforms.**
- It was conducted on the **Greatdrill Chaaya platform**, about 30 nm **South West of Mumbai Harbour.**
- The exercise saw actions to **counter contingencies such as a fire in the oil platform, a man overboard, an oil spill in the area, helicopter emergencies**, a hazardous gas leak, assisting a disabled vessel in the offshore area and medical evacuation of the platform crew.
- A number of ships and helicopters from the **Indian Navy, Indian Air Force, Indian Coast Guard, ONGC and Directorate General of Shipping** were deployed for the exercise.
- **Personnel from Maharashtra Police, Customs, Fisheries Department, Mumbai Port Authority, JN Port Authority** and other **concerned state and central civilian**

agencies also participated in it.

### NASA Announces the Astronaut Crew for Artemis II Lunar Flyby

- It will be the **first mission to carry humans to the moon's vicinity since 1972.**
- It is the **second scheduled flight of the Artemis program** and the **first crewed Artemis mission.**
- During Artemis II, four **astronauts will fly around the moon** before returning to Earth.
- It will **use the huge Space Launch System (SLS) mega-rocket and Orion spacecraft** to launch the crew on the lunar flyby mission.
- The astronauts and mission controllers will **collect data on Orion and the crew's performance to assess how ready the Artemis program is to send people to the moon's surface.**

Artemis Program:

- It is **NASA's program to return astronauts to the Moon**, preparing the way for human missions to Mars.
- It **aim to "land the first woman and first person of colour on the Moon"**, explore the lunar surface.
- The Artemis program **includes the construction of the Lunar Gateway space station** in orbit around the Moon.
- **Artemis I: An uncrewed test flight of the Orion spacecraft**, launched on the Space Launch System (SLS) rocket on November 16, 2022.

### Webb Reveals Never-Before-Seen Details in Cassiopeia A

- It is a **remnant of a massive star** that exploded some 340 years ago.
- It is the youngest remnant off a the massive star in our galaxy known to mankind.
- Cas A belongs to the prototypical type of supernova remnant and has been extensively studied by a number of ground-based and space-based observatories,
- The remnant spans about **10 light-years** and is located 11,000 light-years away in the **constellation Cassiopeia.**
- It gives information related to the **supernovae phenomenon** and its complexities.

supernova explosion

- It is the **explosion of a star** and is the largest explosion that takes place in space.
- It happens when **there is a change in the core, or center, of the star.** A change can occur in two different ways, with both resulting in a supernova.
- **The first type of supernova happens in binary star systems:**
  - Binary stars are two stars that orbit the same point. One of the stars, a carbon-oxygen white dwarf, steals matter from its companion star.
  - Eventually, the white dwarf accumulates too much matter. Having too much matter causes the star to explode, resulting in a supernova.

- **The second type of supernova occurs at the end of a single star's lifetime:**
  - As the star runs out of nuclear fuel, some of its mass flows into its core. Eventually, the core is so heavy that it cannot withstand its own gravitational force.
  - The core collapses, which results in the giant explosion of a supernova.

### NASA's High-Resolution Air Quality Control Instrument Launches

Tropospheric Emissions Monitoring of Pollution:

- It will monitor major air pollutants across **North America**.
- **Observations:**
  - It will make important scientific observations, including that of **ozone, nitrogen oxide, sulphur dioxide and formaldehyde levels**.
  - It is capable of measuring air quality over North America hourly during the daytime with a **resolution of several square miles**.
  - It monitors the effects of everything from rush-hour traffic to pollution from **forest fires and volcanoes**.
  - The present pollution-monitoring satellites are in **low Earth orbit (LEO)**, but this new monitoring instrument is **hosted in geostationary orbit**.
- After this launch NASA has joined **South Korea's** Geostationary Environment Monitoring Spectrometer and the **European Space Agency's Sentinel-4** satellite to become an air quality monitoring satellite constellation.

### Iran 'successfully' tests kamikaze drone with 50-kg warhead

Meraj-532:

- It is a **kamikaze drone** equipped with a **piston engine**.
- It has a **range of 450 km**.
- It is capable of flying at a maximum **altitude of 12,000 feet for three straight hours**.
- It has a **50-kg warhead** and can be assembled and prepared for flight easily, making it suitable for rapid reaction operations.

Kamikaze drone

- A kamikaze drone, also called a **suicide drone** or, more formally\*\*, a loitering munition\*\*, is an unmanned aerial vehicle that is **designed to self-destruct after serving its purpose**.
- They can **hover around the target area for some time** (much longer than a cruise missile) **and attack only once a target is located**.
- It may **also feature a built-in warhead or payload**, which is intended to detonate during the engagement.

## It was the second joint warmest March on record: Copernicus

Copernicus programme:

- It is the most ambitious **Earth observation programme** to date.
- It was previously known as the Global Monitoring for Environment and Security programme
- This initiative is headed by the **European Commission (EC)** in partnership with the **European Space Agency (ESA)**.
- **Objectives:** It will provide accurate, timely and easily accessible information to improve the management of the environment, understand and mitigate the effects of climate change and ensure civil security.
- **Services provided by Copernicus fall into 6 categories:** Land management, the marine environment, the atmosphere, emergency response, security and climate change.

Sentinel satellite

- European Space Agency is developing a new family of satellites, called Sentinels, specifically for the **operational needs** of the Copernicus programme.
- The Sentinels will provide a **unique set of observations**, starting with the all-weather, day and night radar images.

## Four Rafale jets for multilateral exercise Orion in France

Exercise Orion

- It is a **multinational exercise hosted by** the French government.
- It is reportedly the **largest ever multinational exercise being carried out by the French defence forces** which have involved their **Army, Navy and Air Force**.
- It includes ground troops, warships, aircraft carriers and combat aircraft and is meant to **boost military cooperation and interoperability** among participating nations.
- Besides the IAF and the FASF, **Air Forces from Germany, Greece, Italy, Netherlands, Spain, U.K. and U.S.** would also be flying in this multilateral exercise.
- The **IAF contingent** will include **four Rafale aircraft, two C-17, two IL-78 aircraft** and 165 air warriors.
- This would be the **first overseas exercise for the IAF's Rafale aircraft**.

## PSLV-C55 mission: ISRO to carry out in-orbit scientific experiments using spent PS4

- The Indian Space Research Organisation (ISRO), which is scheduled to launch the Polar Satellite Launch Vehicle C55 (PSLV-C55) mission on April 22, will carry out in-orbit scientific experiments by using the spent PS4 as an orbital platform. The PSLV-C55 will have **Singapore's TeLEOS-2** as primary satellite and **Lumelite-4** as a co-

- passenger satellite.
- The PSLV-C55 mission has the **PSLV Orbital Experimental Module (POEM)**, where the spent PS4 of the launch vehicle would be utilised as an orbital platform to carry out scientific experiments through non-separating payloads.
- The TeLEOS-2 and Lumelite-4 satellites are intended to be launched into an eastward low inclination orbit.
- Once deployed and operational, it will be used to support the satellite imagery requirements of various agencies within the Government of Singapore.
- The TeLEOS-2 will be able to provide all-weather day and night coverage, and be capable of imaging at 1m full-polarimetric resolution.

## PSLV

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. After its first successful launch in October 1994, PSLV emerged as the reliable and versatile workhorse launch vehicle of India with 39 consecutively successful missions by June 2017. During 1994-2017 period, the vehicle has launched 48 Indian satellites and 209 satellites for customers from abroad.

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.

- It is a four stage launch vehicle.
- A large solid rocket motor forming the first stage,
- An earth storable liquid stage as the second stage,
- A high performance solid rocket motor as third stage, and
- A liquid stage with engines as fourth stage.
- The vehicle successfully launched two spacecraft – Chandrayaan-1 in 2008 and Mars Orbiter Spacecraft in 2013

## Galaxy mergers ignite 'quasars' — the most powerful celestial objects

- The collision of two galaxies likely ignites quasars, the new study published
- As a supermassive black hole feed on gas and dust, it releases extraordinary amounts of energy in the form of radiation, resulting in a quasar.
- When galaxies collide, it pushes the gas from the outer reaches of the galaxies to the centre. And as the supermassive black hole gorges on the gas, it releases ferocious fountains of energy in the form of radiation, leading to the quasar.
- These results present strong evidence that galaxy interactions are the dominant trigger for quasars in the local universe.

## Quasars

- The **quasi-stellar radio sources** (Quasars) were first discovered six decades ago.
- These are very **luminous objects in faraway galaxies** that emit jets at radio frequencies.
- They are **located in supermassive black holes**, which sit in the centre of galaxies.



- These are formed by the **energy emitted by materials spiralling around a black hole** right before being sucked into it.
- Most quasars **are larger than our solar system**. A quasar is approximately 1-kilo parsec in width.
- When galaxies collide, it pushes the gas from the outer reaches of the galaxies to the centre.
- As the supermassive black hole gorges on the gas, it **releases ferocious fountains** of energy in the form of radiation, leading to the quasar.

## SOCIETY

### President, PM, HM, CM greet people of Odisha on 'Utkal Dibasa'

- The modern state of Odisha was established on **1 April 1936 at Kanika Palace**, Cuttack, as a province in India, and consists predominantly of Odia speakers. 1 April is therefore celebrated as Utkal Divas (Odisha Day).

### History of the Odisha

- The British had occupied the Northern Circars, comprising the southern coast of Odisha, as a result of the **Second Carnatic War by 1760**, and incorporated them into the Madras Presidency gradually.
- In 1803, the British ousted the Marathas from the Puri-Cuttack region of Odisha during the Second Anglo-Maratha War. The northern and western districts of Odisha were incorporated into the Bengal Presidency.
- In 1903, the **Utkal Sammilani organisation** was founded to demand the unification of Odia-speaking regions into one state.
- On 1 April 1912, the Bihar and Orissa Province was formed and on 1 April 1936, Bihar and Orissa were split into separate provinces.
- The new province of Orissa came into existence on a linguistic basis during the British rule in India, with **Sir John Austen Hubback** as the first governor.
- Following India's independence, on 15 August 1947, 27 princely states signed the document to join Orissa.

### How a 'hybrid' gamosa sparked protests across Assam

#### Assamese gamosa

- The 'gamosa or gamocha' is a **hand-woven rectangular cotton piece** of cloth with red borders and different designs and motifs.
- It is traditionally offered to elders and guests as a mark of respect and honour by Assamese people.
- It is an integral part of **all socio-religious ceremonies** in the state and is considered an Assamese identity and pride.
- For specific purposes, it is also made of expensive materials like traditional **Assamese 'Pat' silk** and in different colours as well.
- The 'gamosa' meant for exchange during the '**Bihu**' festival is known as 'Bihuwan'.
- It is a unique scarf found only in Assam and also **received Geographic Indication (GI) tag**.

#### Geographic Indication Tag

- A Geographical Indication is a sign used on products that **have a specific geographical origin** and possess qualities or a reputation that are due to that origin.
- This tag is typically used for agricultural products, foodstuffs, wine and spirit drinks,

- handicrafts and industrial products.
- The **Geographical Indications of Goods (Registration and Protection) Act, 1999** seeks to provide for the registration and better protection of geographical indications relating to goods in India.
- This GI tag is **valid for 10 years** following which it can be renewed.

### Kathua's 'Basohli Painting' gets GI tag

- Basholi paintings originated in the Basholi region of **Jammu and Kashmir**.
- It is a reputed school of **miniature paintings** known for its vivid, evocative colours, bold lines, and deep-set facial patterns.
- It is considered the first school of **Pahari paintings**
- **Patronage:** The Basholi painting style flourished during the 17th and 18th centuries under the patronage of local rulers and wealthy merchants.
- **Features of the Basholi painting**
  - It has peculiar characteristics, they have perfect geometrical patterns, bright colours and glossy enamel.
  - **Colours used: Ochre yellow, brown, and green grounds predominating.**
  - The figures in the paintings are shown clad in rich costumes, stylised faces and large bulging eyes lent unique individuality to these paintings.
  - **Themes:** The portraits of **local rulers, Radha-Krishna, and Madhava-Malati love themes** and themes from the Bhagavata Purana.
  - These are painted **on paper, cloth, or wood** using natural pigments and dyes.

### Geographical Indication Tag

- A Geographical Indication is a sign used on products that **have a specific geographical origin** and possess qualities or a reputation that are due to that origin.
- Geographical indications are typically used for **agricultural products, foodstuffs, wine and spirit drinks, handicrafts and industrial products**.
- The **Geographical Indications of Goods (Registration and Protection) Act, 1999** seeks to provide for the registration and better protection of geographical indications relating to goods in India.
- This GI tag is valid for a period of **10 years** following which it can be renewed.

### Mahavir Jayanti: Birth anniversary of Lord Mahavira

- Lord Mahavir was the **twenty-fourth and the last Tirthankara of the Jain religion**.
- He was **born in 599 B.C.** as a prince in **Bihar**, India.
- **At the age of 30, he left his family** and royal household, gave up his worldly possessions, including clothing and become a monk.
- **He organized his followers, into a four fold order**, namely **monk (Sadhu), nun (Sadhvi), layman (Shravak), and laywoman (Shravika)**. Later on **they are known as Jains**.
- The ultimate **objective of his teaching is how one can attain the total freedom**

from the cycle of birth, life, pain, misery, and death, and achieve the permanent blissful state of one's self. This is also known as **liberation, nirvana**, absolute freedom, or Moksha.

- He explained that from eternity, every living being (soul) is in bondage of karmic atoms, that are accumulated by its own good or bad deeds.
- He preached that right faith (samyak-darshana), right knowledge (samyak-jnana), and right conduct (samyak-charitra) together will help attain the liberation of one's self.

Tirthankaras

- In Jainism, those who have conquered their passions are called Jins.
- Those Jins who have founded religious orders are called Tirthankaras.

### Kurmi community protests in West Bengal: Train services disrupted in Bankura, Purulia and West Midnapore

- Kurmi is traditionally a non-elite tiller caste in the lower Gangetic plain of India, especially southern regions of Awadh, eastern Uttar Pradesh and parts of Bihar.
- The Kurmis came to be known for their exceptional work ethic, superior tillage and manuring, and gender-neutral culture, bringing praise from Mughal and British administrators alike.
- Currently, in Odisha, West Bengal and Jharkhand, the Kurmi community is classified under the Other Backward Classes group with the Odisha government also recognising the community under the Socially and Educationally Backward Classes.
- State governments in Jharkhand and West Bengal have repeatedly recommended the inclusion of this community in the ST list.

### Muthuvan tribal community coexisting with wild animals

- The Muthuvan people live on the border hill forests of Kerala and Tamil Nadu.
- They speak slightly two different dialects and call each other Malayalam Muthuvan and Pandi Muthuvan.
- Muthuvan are animists and spirit worshippers and also worship the forest gods,
- They believe that the spirits of their ancestors are to be the first migrants to the hill forests.
- The Muthuvan tribe has a unique system of governance called the 'Kani System'.
- Under this system, each village is headed by a 'Kani', who is responsible for the administration of the village.
- They have expertise in traditional medicines which are very effective and these medicines and the medicine men are confidentially preserved and passed on to the generations.
- **Occupation: Agriculture** is the main occupation of these Muthuvan tribes, producing

quite a number of products like ragi, cardamom and lemon grass.

### Proposed Dibang Tiger Reserve and Idu Mishmi people

- **Who are they?** The Idu Mishmi is a **sub-tribe of the larger Mishmi group** (the other two Mishmi groups are Digaru and Miju) in **Arunachal Pradesh and neighbouring Tibet**.
- They **primarily live in Mishmi Hills, bordering Tibet** in Arunachal Pradesh.
- Their **ancestral homelands** are spread over the **districts of Dibang Valley and Lower Dibang Valley**, as well as parts of Upper Siang and Lohit.
- They **are known for their weaving and craftsmanship skills**.
- They can be distinctively **identified by their typical hairstyle, distinctive customs and artistic pattern embedded on their clothes**.
- **Population:** The tribe is estimated to comprise around **12,000 people** (as per the census 2011).
- **Language:** Their language, called '**Idu Mishmi**', is **considered endangered by UNESCO**.
- **Relation with nature:**
  - **Traditionally animists**, the tribe has **strong ties with the region's rich flora and fauna**.
  - **Tigers are especially important to the Idu Mishmis** — according to Idu mythology, they were born to the same mother, and thus, tigers are their "elder brothers".
  - **While hunting has traditionally been a way of life**, the Idu Mishmis **also follow a strict belief system of myths and taboos — 'iyu-ena'** — that restrict them from hunting many animals, including a **complete prohibition on killing tigers**.

### Assam set to attempt a world-record Bihu performance

Rongali Bihu:

- It is one of the major **festival of Assam** which is commonly known as **Bohag bihu**
- It is the most popular Bihu that celebrates the onset of the Assamese New Year and the **coming of spring**.
- The word 'Rongali' is derived from 'Rong' which means **Happiness and celebrations**.
- This festival reflects the rich culture of Assamese society.
- During the celebration, traditional pat or muga silk or cotton **mekhela chadors** are worn by ladies (the two-piece attire).
- As a sign of affection and respect, **gamocha**, the traditional Assamese towel, also known as Bihuwaan, is exchanged.

Bihu

- Bihu is a secular festival that is celebrated by people from all parts of Assam

irrespective of caste creed or religious background.

- The first Bihu is known as the **Rongali Bihu or Bohag Bihu**, which is celebrated in the **month of April**.
- The second Bihu is known as **Kati Bihu or Kongali Bihu**, which is celebrated during the **month of October**
- Finally there is **Magh Bihu**, which is observed during the **month of January**.

### PM participates in 125th Anniversary celebrations of Sri Ramakrishna Math

Ramakrishna Movement:

- It was initiated by Swami Vivekananda to spread the **universal message of Vedanta** in the light of Sri Ramakrishna Paramhansa (He was a teacher of swami Vivekanand)
- The main motto of this initiative is to work for the **alleviating of the poor** and the downtrodden with the motto 'for one's liberation and the good of the world'.
- With this aim, Swami Vivekananda founded the Ramakrishna Math and Ramakrishna Mission.
- The Ramakrishna Mission was formed in May 1897 with aims purely **spiritual and humanitarian**.

Vedanta

- Vedanta is one of the world's most **ancient spiritual philosophies** and one of its broadest, based on the Vedas, the sacred scriptures of India.
- **Vedanta affirms:**
  - The oneness of existence,
  - The divinity of the soul, and
  - The harmony of all religions.

### Indian-American Mathematician CR Rao Awarded 'Nobel Prize' in Statistics

- The International Prize in Statistics is awarded **every two years** by a **collaboration among five leading international statistics organisations**.
- The prize recognises a major achievement by **an individual or team in the statistics field**.
- The prize is modelled after the Nobel prizes, Abel Prize, Fields Medal and Turing Award and called as **Math's Nobel**.

C. R. Rao

- Rao, a prominent **Indian-American mathematician and statistician** was born to a Telugu family in **Hadagali, Karnataka**.
- He is currently a professor emeritus at Pennsylvania State University and Research Professor at the University at Buffalo.
- Rao has received many honours, like-**Padma Bhushan (1968) and Padma**

### Vibhushan (2001).

- In his remarkable **1945 paper** published in the Bulletin of the Calcutta Mathematical Society, Rao demonstrated **three fundamental results** that paved the way for the modern field of statistics and provided statistical tools heavily used in science today.
- The **first**, known as **the Cramer-Rao lower bound**, **2nd** known as **the Rao-Blackwell** and the **third result** provided insights that pioneered a new interdisciplinary field that has flourished as “**information geometry**.”
- Combined, these results help scientists more efficiently extract information from data.

Applications of his theories:

- The Cramer-Rao lower bound is of great importance in such diverse fields as **signal processing, spectroscopy, radar systems**, multiple image radiography, risk analysis, and **quantum physics**.
- The Rao-Blackwell process has been applied to stereology, particle filtering, and **computational econometrics**.
- Information geometry has recently been used to aid the understanding and optimization of **Higgs boson measurements at the Large Hadron Collider**.
  - It has also found applications in recent research on **radars and antennas** and contributed significantly to advancements in artificial intelligence, **data science, signal processing**, shape classification and image segregation.

### UN Commission's goal of achieving quality education for all is 'seriously off track'

- Currently around **263 million** children and young **people** are **out of school** in the world.
- Nearly **70 % of children in poorer countries** cannot understand a basic text by age 10, mainly due to chronic factors such as poverty and malnutrition.
- The situation of **women and girls in Afghanistan** is severe where they have been banned from high school and university.
- Comprehensive sexuality education (CSE) empowers girls to avoid unintended pregnancies and encourages both genders to stay in school, among other benefits.
- Most of countries are facing “a **triple crisis in education** – one of **equity and inclusion, quality** and **relevance**, to equip current and future generations with the skills they need to thrive in a fast-changing world.”

UN Commission on Population and Development:

- A Population Commission was established by the Economic and Social Council (ECOSOC) in **1946**, which was **renamed as the Commission on Population and Development** by the General Assembly in 1994.
- The Commission is composed of **47 Member countries**.
- Member countries are **elected by the Economic and Social Council** for a period of **four years** on the basis of geographic distribution.
- Commission was constituted as **three-tiered intergovernmental mechanism** that plays the primary role in the follow-up to the implementation of the programme of Action.

- **The meetings of commission** was held typically every two or three years until 1994, after which it has been **held once a year**.

### India to bridge language gap with neighbours

Language Friendship Bridge Project:

- India is planning to create a **pool of experts in languages spoken** in countries like **Myanmar, Sri Lanka, Uzbekistan and Indonesia** to facilitate better people-to-people exchanges.
- It plans to **train five to 10 people** in the official languages of each of these countries.
- As of now, the ICCR has zeroed in on 10 languages: Kazakh, Uzbek, Bhutanese, Ghoti (spoken in Tibet), Burmese, Khmer (spoken in Cambodia), Thai, Sinhalese and Bahasa (spoken in both Indonesia and Malaysia).

Indian Council for Cultural Relations (ICCR)

- The Indian Council for Cultural Relations (ICCR) was **founded** in 1950 by **Maulana Abul Kalam Azad**.
- **Objectives**
  - To actively participate in the **formulation and implementation of policies** and programmes pertaining to India's **external cultural relations**.
  - To foster and **strengthen cultural relations** and mutual understanding between India and other countries
  - To **promote cultural exchanges** with other countries and people, and to develop relations with nations.

### Ancient soccer scoreboard found at Yucatan peninsula, Mexico

- The circular piece, measuring just over 32 centimetres in diameter and weighing 40 kilograms displays **hieroglyphic writing** surrounding two players standing next to a ball that was discovered on this site.

Chichen Itza:

- It was one of the greatest Mayan centres of **the Yucatán peninsula**.
- This city was established during the Classic period close to two natural cavities (cenotes or chenes), which gave the town its name.
- Mayan people ruled for over 1,000 years and left their mark on the city.
- It is thought to have been a **religious, military, political, and commercial centre** that at its peak would have been home to 35,000 people.
- It was designated a **UNESCO World Heritage** site in 1988.

Yucatan peninsula



- It is a Northeastern projection of Central America which is **lying between the Gulf of Mexico** to the west and north and the **Caribbean Sea** to the east.
- The peninsula is almost wholly composed of beds of coralline and porous limestone rocks.

### Bishnois raise concern over felling of Khejri trees

Bishnoi community:

- The Bishnois belong to a Hindu religious sect found in the **Western Thar Desert** and some northern states of India.
- They trace their origins to the teachings of **Guru Jambhesvara** who was born to a Panwar Rajput family in 1451 AD at Peepasar village of Nagore district in Western Rajasthan.
- They strictly forbid the harming of **trees and animals**.
- They believe in protecting the environment and can die doing it so.
- The person of this community are inspired and gets inspiration **from Amrita Devi**, a Bishnoi woman who was killed in 1730 while trying to protect a grove of **khejri trees**.

Khejri tree

- It is considered a sacred tree in Rajasthan.
- It is **also called jant or janti** in areas like Alwar, Sikar, Jhunjhunu,
- Significance:
  - It is a **nitrogen-fixing tree** which enhances the fertility of the soil.
  - The fruit is used to make the very popular **local dish 'Sangri'**
  - The bark of this tree is used **medicinally** for a range of ailments.
  - It plays a vital role in preserving the ecosystem of arid and semi-arid areas, mainly in the Thar Desert.
  - The leaves have high nutritive value and are locally called 'loong'.

### Gond painting from Madhya Pradesh receives GI tag

- It is a famous folk art of the **Gond tribal community of central India**.
- It is done **to preserve and communicate the culture** of the Gond tribal community.
- **Themes:** Gond tribes are highly interlinked with nature and this appears in their paintings too they include **animals, mahua tree, mythological stories, Hindu gods, Local deities and folktales etc.**
- Each Gond artist uses his distinctive pattern and style to fill the images these **style signatures** are used in collage to make a complete picture such as Dots, fine Lines, Curved Lines, Dashes Fish Scales etc.

Gond Tribe

- The Gonds are the **largest tribal Community in India** and can be traced to the pre-

- Aryan era.
- The word Gond comes from Kond, which means green mountains.
  - They are a heterogeneous group **spreading over large** areas from the Godavari gorges in the south to the Vindhya Mountains in the north.
  - They live in the states of **Madhya Pradesh, Maharashtra, Telangana, Andhra Pradesh, Bihar, and Odisha.**
  - The majority speak various mutually unintelligible dialects of **Gondi.**

### Amit Shah urges people to visit India's 'first village' Kibithoo in Arunachal Pradesh

- During his trip, the home minister had said that Kibithoo should not be termed as India's last village but first village as the Sun's rays fall first in this village in the country.

Kibithoo Village:

- **Location:** It is located in **Anjaw district of Arunachal Pradesh.**
- It lies on the **right bank of the Lohit River.**
- **Elevation: 1305 meters.**
- The **Meyors tribe** form **bulk of its population.**
- It is one of the **most remote Circle Headquarters in Arunachal Pradesh** and the **only Circle Headquarters facing the border of India and China.**
- It has also been the **witness of the war between India and China** in the year 1962.

Lohit River:

- It is the **farthest east tributary of Brahmaputra River.**
- **Origin:** Tirap Phasi Ranges located in the **Eastern Tibet.**
- It **enters India via Kibithoo village** lying at the border post in Arunachal Pradesh.
- The river after entering the country **travels through Mishmi Hills** of Anjaw and then move towards Lohit district.
- **The river travels all along** from Tibet to Arunachal Pradesh **for about two hundred kilometers, before merging in Brahmaputra River, Assam.**

### LG Sinha Says His Admin Steering Change in Socio-economic Landscape of J-K with Citizen's Participation

- Speaking in his monthly "Awaam Ki Awaaz" radio programme, he said the Jammu and Kashmir administration is bringing about a change in the socio-economic scenario of the Union Territory with the participation of citizens.
- Kashmir division is witnessing a 'yellow revolution', which has registered a significant increase in oilseed crops. "There will be additional opportunities for oil extraction and value addition and hence more entrepreneurial opportunities for the people," the Lt Governor said.
- Congratulating the people of Jammu and Kashmir for the GI-tagging of the famous

- Basholi painting.
- Basohli Painting has become the first independent GI-tagged product of the Jammu region. This will give customers access to authentic produce and give a huge boost to the local economy.”

#### Basohli School

- This school of Pahari painting received patronage from **Raja Kripal Pal**
- **Famous paintings belonging to this school:**
  - An artist named **Devidasa** executed miniatures in the form of the **Rasamanjari** illustrations in 1694 A.D.
  - **An illustration from a series of Gita Govinda painted by artist Manaku in 1730 A.D** is another famous example of this school of painting
- From the paintings
  - There is a change in the **facial type** which becomes a **little heavier** and also in the **tree forms which assume a somewhat naturalistic character**, which may be due to the influence of the Mughal painting.
  - There is the use of **strong and contrasting colours, monochrome background, large eyes, bold drawing, use of beetles wings for showing diamonds in ornaments**, narrow sky and the red border are observable in this miniature.

#### Faith in children's vaccines has gone up in India, says UNICEF

Only China, India, and Mexico, that is three out of the 55 countries studied for popular perception of the importance of vaccines for children, showed improvement as per data collected by The Vaccine Confidence Project (London School of Hygiene and Tropical Medicine) and published by UNICEF.

#### Vaccine hesitancy

The report warns of the growing threat of **vaccine hesitancy** due to factors such as misleading information and declining trust in vaccine efficacy.

The decline in vaccine confidence globally comes amid the largest sustained backslide in childhood immunisation in 30 years, fuelled by the COVID-19 pandemic.

The pandemic interrupted childhood vaccination almost everywhere, especially due to intense demands on health systems, the diversion of immunisation resources to COVID-19 vaccination, health worker shortages and stay-at-home measures.

The report said a total of 67 million children missed out on vaccinations between 2019 and 2021, with vaccination coverage levels decreasing in 112 countries.

#### UNICEF

**United Nations Children's Fund (UNICEF)** is a special program of the **United Nations (UN)**

devoted to aiding national efforts to improve the health, nutrition, education, and general welfare of children.

### History

- **UNICEF** was created in **1946** as International Children's Emergency Fund (ICEF) by UN relief Rehabilitation Administration to help children affected by World War II.
- UNICEF became a **permanent part** of the **United Nations in 1953**.
  - The name was shortened to **United Nations Children Fund** but it is still referred to as UNICEF.
- It is **mandated by the United Nations General Assembly** to advocate for the protection of children's rights, to help meet their basic needs and to expand their opportunities to reach their full potential.
- UNICEF is guided by the **Convention on the Rights of the Child, 1989**.
  - It strives to establish **children's rights** as enduring **ethical principles** and **international standards** of behaviour towards children.
- Awarded the **Nobel Prize for Peace** in 1965 for "**promotion of brotherhood among the nations**".
- **Headquarters:** New York City.
  - It works in over 190 countries and territories with **7 regional offices**.

### Structure

- UNICEF is governed by an **Executive Board** consisting of 36 members that are elected to terms of three years by the **United Nations' Economic and Social Council**.
- The following countries are home to UNICEF Regional Offices.
  - The Americas and Caribbean Regional Office, **Panama City, Panama**
  - Europe and Central Asia Regional Office, **Geneva, Switzerland**
  - East Asia and the Pacific Regional Office, **Bangkok, Thailand**
  - Eastern and Southern Africa Regional Office, **Nairobi, Kenya**
  - The Middle East and North Africa Regional Office, **Amman, Jordan**
  - South Asia Regional Office, **Kathmandu, Nepal**
  - West and Central Africa Regional Office, **Dakar, Senegal**
- Each region that UNICEF serves is allocated a number of seats on the Executive Board, so all regions are represented.
- There are also **33 national committees** across the globe, which are non-governmental organizations that help promote the rights of children and fundraise.

### Funding

- The **national committees are an integral part of UNICEF's global organization** and a unique feature of UNICEF.
  - Serving as the public face and dedicated voice of UNICEF, the National Committees work tirelessly to raise funds from the private sector, promote children's rights and secure worldwide visibility for children threatened by poverty, disasters, armed conflict, abuse and exploitation.
- UNICEF is funded exclusively by **voluntary contributions**, and the **National Committees** collectively raise around one-third of UNICEF's annual income.

- This comes through contributions from corporations, civil society organizations and more than 6 million individual donors worldwide.
- It also **rallies many different partners** – including the media, national and local government officials, NGOs, specialists such as doctors and lawyers, corporations, schools, young people and the general public – on issues related to children's rights.

#### UNICEF and India

- UNICEF **began its work in India in 1949** with three staff members and established an office in Delhi three years later.
  - Currently, it advocates for the rights of India's children in 16 states.
- **Nodal Ministries:** Ministry of Women and Child Development.
- Work done by UNICEF in India includes:
  - **Census support, 2011:** Gender issues were mainstreamed into the training and communication strategy for the 2011 Census.
  - **Polio Campaign, 2012:** Polio cases in India fell from 559 in 2008 to zero cases in 2012.
  - **Reduction in MMR, 2013:** UNICEF's support to the **National Health Mission (NHM)** and the second phase of the **Reproductive and Child Health programme** resulted in increased access to institutional and community-based maternal, neonatal and child health services.
  - **Call to Action, 2013:** This initiative was launched to reduce under-five mortality.
  - **Maternal and Child Nutrition, 2013:** The **Ministry of Women and Child Development (MWCD)** successfully launched a nationwide communication campaign on **Maternal and Child Nutrition** with UNICEF Ambassador promoting nutrition for children.
  - **India Newborn Action Plan, 2014:** This is first of this kind in the region, builds upon the existing commitments for newborn under **Call to Action, the RMNCH+A (Reproductive, Maternal, Newborn, Child Health + Adolescent)**.

#### Hakki Pikki: caught in Sudan's civil war

- Hakki Pikki — or bird catchers of Karnataka — got caught in a civil war in Sudan
- The Hakki Pikki of India are the latest group to arrive in Al Fashir, a region that has witnessed an influx of people because of the Darfur crisis.
- A nomadic tribe, the Hakki Pikki don't have ready access to education and vocational training; so they relied on their native wisdom to earn a living, They make herbal medicines from gathering forest produce.
- It was this traditional knowledge that found a place in the post-pandemic world. Africa has its own indigenous medicine and these herbal healers from India found ready acceptance.

#### HakkiPikki

- The **HakkiPikki is a Kshatriya or warrior tribal community** who had to migrate to South India after being defeated by the Mughals.

- 'Hakki' means 'bird' in Kannada, and 'Pikki' means 'to catch'. As a result, the **group is known as the 'bird catcher,'** referring to their traditional work.
- Hakki-Pikki has a population of 11,892 people, according to the 2011 census.

#### About

- It is a nomadic community that originated in the forests of Karnataka.
- It is a **Scheduled Tribe of Karnataka**.
- They are **also known as Kirshaka Bandi**, which means "farmers' enemies" because they used to raid the crops of the settled farmers.
- They are **well-known for their traditional medicines**. For a long time, the group lived in the deep woods and developed its plant and herb-based medicinal systems.
  - Traditional medicinal knowledge of the Hakki-Pikkis is in high demand in numerous African countries. As a result, for many years, community members have travelled to the continent.
- They have their dialect, which is a mixture of Kannada, Telugu, Tamil, and Marathi.
- However, they do not feature on the list of India's particularly vulnerable tribal groups (PVTGs).

#### Social Structure

- The tribe has a unique social structure, based on clans and sub-clans.
- **Each clan has a headman, called a Nayaka**, who is responsible for the welfare and discipline of the clan members.
  - The Nayaka also acts as a mediator in case of disputes or conflicts among the clan members or with other clans.
- **The tribe follows a matrilineal system of inheritance**, where property and wealth are passed down from mother to daughter.
  - Women also have more authority in decision-making and leadership roles within the family and the community.

#### Life Style

- The Hakki Pikki tribe has a distinctive way of life, which is influenced by their nomadic nature.
- **They live in temporary huts** made of bamboo and grass, which they dismantle and carry with them when they move to a new place.
- They wear colourful clothes and ornaments, made of beads, shells, coins, and feathers.
- The tribe has a rich and diverse culture, with their language, customs, beliefs, and traditions.
- **Scholars dubbed their mother tongue "Vaagri."** They communicate in 'Vaagri' at home but speak Kannada daily.
  - UNESCO has designated 'Vaagri' as one of the endangered languages.

[Pushkaralu festival returns to the Ganga after a gap of 12 years](#)

- The 12-day Pushkaralu festival celebrated by Telugus started in Varanasi with the Uttar Pradesh government expecting more than one lakh pilgrims to visit the city as part of the event till May 3.
- The festival, during which pilgrims worship the Ganga and their ancestors, is being organised in Varanasi after a gap of 12 years.
- It is the second event, after the Kashi-Tamil Sangamam, being organised in Varanasi which will witness a large number of South Indians visiting the city.

### Pushkaram

- Pushkaram is an Indian festival dedicated to worshipping of rivers.
- It is also known as **Pushkaralu** (in Telugu), **Pushkara** (in Kannada) or Pushkar.
- It is celebrated at shrines along the banks of 12 major sacred rivers in India, in the form of ancestor worship, spiritual discourses, devotional music and cultural programmes.
- The celebration happens annually, once in 12 years along each river.
- Each river is associated with a zodiac sign, and the river for each year's festival is based on which sign Jupiter is in at the time.

### The Congress leader took part in Basava Jayanti celebrations in Karnataka

#### Basavana

- Basaveshwara was **born in Bagevadi (of undivided Bijapur district in Karnataka) in 1131 AD.**
  - A 12century poet and philosopher, who is celebrated and held in high regard, especially by the **Lingayat community**, as he was the **founder of Lingayatism.**
    - The term Lingayat denotes a **person who wears a personal linga**, an iconic **form of God Shiva**, on the body which is received during the initiation ceremony.
  - In Kalyana, the **Kalachurya king Bijjala (1157-1167, AD)** appointed Basaveshwara as a **karanika (Accountant)** in the initial stage, in his court and **later as the Prime minister.**
- **Main Teachings:** His spiritual discipline was based on the principles of **Arivu (true knowledge), Achara (right conduct), and Anubhava (divine experience)** and it brought a social, religious and economic revolution in the **12th century.**
  - This path advocates a **holistic approach to Lingangayoga** (union with the divine).
  - This comprehensive discipline encompasses **bhakti (devotion), jnana (knowledge), and kriya (action)** in a well-balanced manner.
- **Social Reforms:** Basaveshwara is known to have brought about several social reforms.
  - He believed in a society free of the caste system, with **equal opportunity for all and preached about manual hard work.**
  - He also founded the **Anubhava Mantapa**, loosely translated as the forum of experiences, an academy which included Lingayat mystics, saints, and

- philosophers.
- **Other Socio-Economic Principles:** Basaveshwara gave two more very important socio-economic principles.
    - **Kayaka (Divine work):**
      - According to this, every individual in society should take up the job of his choice and perform it with all sincerity.
    - **Dasoha (Equal distribution):**
      - There must be an equal income for equal work.
      - The worker (Kayakajeevi) may lead his day-to-day life by his hard-earned income. But he should not preserve the money or property for tomorrow. He must utilize the surplus money for society and the poor.

### Anubhava Mantapa

- Basaveshwara established the **Anubhava Mantapa**, which was a common forum for all to discuss the prevailing problems of **socio, economic and political strata** including religious and spiritual principles along with personal problems.
- Thus, it was the first and foremost **Parliament of India**, where Sharanas (citizens of welfare society) sat together and discussed the **socialistic principles of a Democratic set up**.
- All those discussions of Sharanas **were written in the form of Vachanas**.
  - Vachanas were an innovative literary form written in simple Kannada language.
  - His practical approach and act of establishment of 'Kalyana Rajya' (Welfare state) brought a new status and position for all the citizens of the society, irrespective of class, caste, creed and sex.
- Recently, the Chief Minister of Karnataka has laid the **foundation stone for the 'New Anubhava Mantapa'** in Basavakalyan.

### World Malaria Day

World Malaria Day is observed on 25th April every year to spread awareness of the global effort to control and ultimately eradicate malaria.

- World Malaria Day was first held in 2008. It was **developed from Africa Malaria Day**, which was an event that had been observed since 2001 by African governments.
- The theme 2022 is "**Harness innovation to reduce the malaria disease burden and save lives.**"

### Malaria

- **Malaria** is a life-threatening **mosquito borne blood disease caused by plasmodium parasites**. It is predominantly found in the **tropical and subtropical areas of Africa, South America as well as Asia**.
- The parasites spread through the bites of infected female **Anopheles mosquitoes**.
  - After entering the human body, parasites initially multiply within the liver cells and then attack the Red Blood Cells (RBCs) resulting in their rupture.
- There are 5 **parasite species that cause malaria in humans**, and 2 of these species



- **Plasmodium falciparum and Plasmodium vivax** – pose the greatest threat.
- **Symptoms** of malaria include fever and flu-like illness, including shaking chills, headache, muscle aches, and tiredness.
- It is **preventable as well as curable**.
- Malaria Vaccine:
  - Known by its lab initials as **RTS, S** but branded as **Mosquirix**, the vaccine has passed lengthy scientific trials that found it to be safe and reducing the risk of malaria by nearly **40%**, the best recorded.
  - It was developed by GlaxoSmithKline (GSK) company and approved by the **European Medicines Agency in 2015**.
  - The RTS, S vaccine **trains the immune system to attack the malaria parasite** (Plasmodium (P.) falciparum, the deadliest species of the malaria parasite).
- India's Scenario:
  - Malaria Burden: The **World Malaria Report (WMR) 2020** released by **World Health Organization (WHO)**, which gives the estimated cases for malaria across the world, indicates that India has made considerable progress in reducing its malaria burden.
    - India is the only high endemic country which has reported a decline of **17.6%** in 2019 as compared to 2018.

#### Initiatives

- The **WHO** has also identified 25 countries with the potential to eradicate malaria by 2025 under its '**E-2025 Initiative**'.
- **In India, malaria elimination efforts were initiated in 2015** and were intensified after the launch of the National Framework for Malaria Elimination (NFME) in 2016 by the Ministry of Health and Family Welfare.
  - NFME is in line with WHO's Global Technical Strategy for Malaria, 2016-2030, which guides the WHO **Global Malaria Programme (GMP)**, responsible for coordinating WHO's global efforts to control and eliminate malaria.
- The **National Strategic Plan for Malaria Elimination (2017-22)** was launched in July 2017 which laid down strategies for the following five years.
  - It gives year-wise elimination targets in various parts of the country depending upon the endemicity of malaria.
- Implementation of the **High Burden to High Impact (HBHI) initiative** was started in four states (West Bengal, Jharkhand, Chhattisgarh and Madhya Pradesh) in July 2019.
- **Distribution of Long Lasting Insecticidal Nets (LLINs)** to high burden areas has led to a reduction in endemicity in these otherwise very high endemic states.
- The **Indian Council of Medical Research (ICMR)** has established Malaria Elimination Research Alliance-India (MERA-India) which is a conglomeration of partners working on malaria control.

#### Don't 'perpetuate prejudices' against communities, Arunachal CM urged

Arunachal Pradesh Chief Minister Pema Khandu has ruffled the feathers of the Chakmas,

settled in the state, by calling them “refugees”.

The Chakma Development Foundation of India (CDFI) urged him not to perpetuate prejudices against the Chakmas and the Hajongs by branding them as refugees and stating that they are not eligible for permanent settlement in the state.

- **Chakmas and Hajongs:**

- Mizoram and Tripura have a sizeable population of the **Buddhist Chakmas** while the **Hindu Hajongs mostly inhabit the Garo Hills of Meghalaya** and adjoining areas of Assam.
- The Chakmas and Hajongs of Arunachal Pradesh are migrants from the Chittagong Hill Tracts of erstwhile **East Pakistan, now Bangladesh**.
- Displaced by the Kaptai dam on the Karnaphuli River in the 1960s, they sought asylum in India and were settled in relief camps in the southern and south-eastern parts of Arunachal Pradesh from 1964 to 1969.
  - A majority of them live in the **Changlang district** of the State (**Arunachal Pradesh**) today.

- **Citizenship Status:**

- Out of the 65,000 Chakmas and Hajongs, about 60,500 are citizens by birth under Section 3 of the **Citizenship Act, 1955**, after having been born before 1 July 1987, or as descendants of those who were born before this date.
  - The applications of the remaining 4,500 surviving migrants following the 1996 **Supreme Court order have not been processed to date**.
- The **Citizenship (Amendment) Act of 2019**, which amended two sections of the 1955 Act, has nothing to do with the Chakma-Hajongs since they were permanently settled by the Union of India in the 1960s.
- And since 95% of the migrants were born in the **North-East Frontier Agency or Arunachal Pradesh**, the **Inner Line Permit** mandatory under the Bengal Eastern Frontier Regulation of 1873 for outsiders seeking to visit the State, also does not apply to them.

### **Manamadurai pottery from the state of Tamil Nadu earned a Geographical Indication (GI) tag.**

- The **Vaigai River enriches** the clay used for the Manamadurai pottery.
- Pot making requires expertise as the bottom has to be perfectly round.
- The circumference of the pot and the neck should be proportionate so that the pot sits flat on the ground.
- The right proportion of mud, clay and heating makes this product very strong.
- The main raw materials for making these pots are soil and water.
- The **sand, collected from different places** in the district, is used for making pottery

and dried for two days. The particles of the mud get separated by sieving.

### Geographical Indication

- It is a sign used on products that have a **specific geographical origin and possess** qualities or a reputation that are due to that origin.
- This is typically used for agricultural products, foodstuffs, wine and spirit drinks, handicrafts and industrial products.
- The **Geographical Indications of Goods (Registration and Protection) Act, 1999** seeks to provide for the registration and better protection of geographical indications relating to goods in India.
- This GI tag is **valid for 10 years** following which it can be renewed.

### Nobel Prize of Asia

- The Dalai Lama receives the 1959 Ramon Magsaysay Award in person from members of the Ramon Magsaysay Award Foundation at his residence in Dharamsala
- The award was the first international recognition given to the spiritual leader for his exceptional leadership of the Tibetan community's courageous fight in safeguarding their sacred religion, which serves as the foundation of their culture and way of life.

### Ramon Magsaysay Award

- The Ramon Magsaysay Award is an annual award that recognizes individuals and organizations in Asia who demonstrate exceptional courage, integrity, and service to their communities.
- Established in 1957, the award was named after the late Philippine President Ramon Magsaysay, who was known for his honest leadership and dedication to public service. The award is often referred to as the "Nobel Prize of Asia" and is administered by the Ramon Magsaysay Award Foundation, based in Manila, Philippines.
- The award is given in six categories, namely **government service, public service, community leadership, journalism, creative arts, and peace and international understanding**. Recipients of the award receive a certificate, a medal, and a cash prize.

Name	Year of Award	Category
Vinoba Bhave	1958	Community Leadership

Jayaprakash Narayan	1965	Public Service
Mother Teresa	1962	Peace and International Understanding
Satyajit Ray	1992	Journalism, Literature, and Creative Communication Arts
M.S. Swaminathan	1986	Public Service
Arvind Kejriwal	2006	Emergent Leadership
Shanta Sinha	2003	Community Leadership
Rajendra Singh	2001	Community Leadership
Kulandei Francis	2012	Community Leadership
Bezwada Wilson	2016	Emergent Leadership
Ravish Kumar	2019	Journalism, Literature, and Creative Communication Arts.

### **Y20 Pre Summit Meeting under G20 hosted by Ministry of Youth Affairs and Sports begins with an excursion trip for delegates**

The Y 20 Pre Summit Meeting under G20 hosted by Ministry of Youth and Sports Affairs began today with an excursion trip today in and around Leh. The meeting is being organised from 26th to 28th April.

Y20 delegates got a glimpse of Ladakh's rich cultural heritage when they visited Hemis and Thiksey Monasteries.

At Hemis Monastery, delegates witnessed the famous **Cham dance**

#### *Cham dance*

- An enigmatic and energetic mask dance.
- Cham dance is used in all four schools of Tibetan Buddhism—Nyingma, Sakya, Kagyu

and Gelug—in their rituals as a sacred dance that is reflective of the Buddhist tantric practices.

*Hemis Monastery:*

- It is a Buddhist monastery located in Leh City,
- It belongs to the **Drukpa lineage of Buddhism**.
- The monastery was first established in the 11th century and later re-established in the 17th century by the Ladakhi King Sengge Namgyal.
- It is also famous for its 2-day religious ceremony known as the **Hemis Festival**.
- This festival is celebrated **in honour of Padmasambhava** which is observed here in
- It is the biggest and very richly endowed monastery.

*Drukpa Lineage Buddhism*

- It was founded in the 12th century by **Gyalwa Gotsangpa**, a disciple of the famous Tibetan master Phagmo Drupa.
- It is particularly prominent in Bhutan.
- This is known for its efforts to **empower women**, and their nuns are allowed to receive the same level of training and education as their male counterparts.

### **WHO launches initiative to make world better prepared for future pandemics**

The World Health Organization (WHO) has launched a new initiative to be better prepared for future outbreaks of a similar scale and devastation as the COVID-19 pandemic.

*PRET*

- The Preparedness and Resilience for Emerging Threats (PRET) Initiative is aimed at providing “guidance on integrated planning for **responding to any respiratory pathogen such as influenza or coronaviruses**”.
- It was announced at the Global Meeting for Future Respiratory Pathogen Pandemics held on 24-26 April 2023 in Geneva, Switzerland.
- The **first module** focuses on respiratory pathogens, including influenza, coronaviruses, and respiratory syncytial virus.
- It involves **three-pronged approach** which includes
  - **Update preparedness plans that affirm priority actions** and that have considered learnings from past events.
  - **Increase connectivity among stakeholders in pandemic preparedness planning** through systematic coordination and cooperation. This includes building equitable systems; conducting joint exercises; and sharing information on good practices, challenges, and opportunities.
  - **Dedicate sustained investments, financing and monitoring of pandemic preparedness** with a particular focus on addressing the gaps identified during past pandemics and epidemics.

### Call to protect historically significant structures at Thirunelly temple

The Indian National Trust for Art and Cultural Heritage (INTACH) has urged the government to conserve the historically significant structures, including the 600-year-old 'Vilakkumadom', an exquisite granite structure, at the Sree Mahavishnu Temple at Thirunelly in Wayanad district during the on-going renovation of the temple.

#### *Thirunelly Temple:*

- It is an ancient temple **dedicated to the Lord Maha Vishnu.**
- **Location:** It is located on the **sides of Brahmagiri Hill**, a part of the Sahyadri Mountain Ranges in the **Wayanad district of Kerala.**
- It is **also known as** the Sahyamala Kshetram and **Kashi of the South.**
- It is the **only temple in the world** where the devotees can **perform all the rituals related to one's life**, starting from birth to death and life after death.
- The rituals in this temple are **performed on the banks of stream Papanashini**, which **originates from the Brahmagiri hills.**
- **Legend behind:**
  - It's an ancient temple where **Lord Brahma is said to establish the idol of Lord Vishnu.**
  - It's believed that **he found the idol on a gooseberry (amla) tree, locally known as nelli**, thus giving Thirunelli its name.
- **Architecture:**
  - The temple embodies **classical, traditional Kerala architecture.**
  - The **shrine is shielded with 30 granite columns**, and the **ground is paved with huge square pieces of granite.**
  - The **inner sanctum is surrounded by a tile-roofed structure**, and there is an **open courtyard** around the Sanctorum.
  - Along the **outer wall of the temple is a cloister made of granite pillars** cut in cubical style.
  - The **main deity idol of the temple is in the form of Chathurbhuja** - Lord Vishnu with his four hands.

#### *Indian National Trust for Art and Cultural Heritage (INTACH):*

- INTACH is an **autonomous non-governmental Indian non-profit society** that seeks to preserve Indian culture and heritage.
- It was **founded in 1984** with the vision to **spearhead heritage awareness and conservation in India.**
- **Headquarters: New Delhi**
- **It operates through various divisions** such as Architectural Heritage, Natural Heritage, Material Heritage, Intangible Cultural Heritage, Heritage Education and Communication Services (HECS), Crafts and Community Cell, Chapters, INTACH Heritage Academy, Heritage Tourism, Listing Cell and Library, Archives and Documentation Centre.

## Dima Hasao insurgent group signs peace pact with Assam, Centre

An Assam-based insurgent group — Dimasa National Liberation Army (DNLA)/Dimasa People's Supreme Council (DPSC) — which operates in the Dima Hasao district, signed a peace agreement with the State Government and the Centre in the presence of Union Home Minister.

- The Memorandum of Understanding (MoU) has been signed which makes the DNLA lay down its arms and abide **by the Constitution of India**.
  - The group will disband their armed organisation, vacate all camps occupied by DNLA cadres and join the mainstream.
  - A total of 179 DNLA cadres will **surrender their arms and ammunition**.
- The central and state governments **will provide Rs 500 crore each** for the development of the **Dimasa tribal areas**.
- Dimasa Welfare Council will be set up by the **Government of Assam to protect, preserve and promote a social, cultural, and linguistic identity** to meet political, economic and educational aspirations and will ensure speedy and focused development of the Dimasa people residing outside the jurisdiction of **North Cachar Hills Autonomous Council (NCHAC)**.
  - Dimasa Tribal Region is run by NCHAC.
- The MoU also provides for the appointment of a Commission under Paragraph 14 of the **Sixth Schedule to the Constitution** of India to examine the demand for the inclusion of additional villages contiguous to the **NCHAC with the Council**.
  - The Sixth Schedule under Article 244 provides for the formation of autonomous administrative divisions — Autonomous District Councils (ADCs) — that have some legislative, judicial, and administrative autonomy within a state.

### DNLA

- It is an insurgent group **operating in Dima Hasao and Karbi Anglong districts in Assam**.
- The DNLA was established in April 2019 seeking a **sovereign territory for the Dimasa tribals** and launched an armed insurgency to achieve its goal.
- The group aims to “develop a sense of brotherhood **among the Dimasas** and also to rebuild the trust and faith among the Dimasa society for regaining the Dimasa Kingdom”.
- The group runs on extortion and taxation. “It draws its support and sustenance from the **NSCN(IM) of Nagaland**.”

### Dimasas

- The Dimasas (or Dimasa-Kacharis) are the **earliest known rulers and settlers of Assam**, and now live in Dima Hasao, Karbi Anglong, Cachar, Hojai and Nagaon districts of central and southern Assam, as well as parts of Nagaland.
  - Some of the historians describe them as “aborigines” or the “**earliest known inhabitants of the Brahmaputra Valley**”.
- Prior to [Ahom rule,]the Dimasa kings — believed to be the descendants of the rulers of the ancient Kamarupa kingdom — ruled large parts of Assam along the south bank

- of the Brahmaputra between the 13th and 16th centuries.
- Their earliest historically known capital was Dimapur (now in Nagaland), and later **Maibang in North Cachar Hills**.
- It was a powerful kingdom and had almost all of the southern belt of Brahmaputra under its control in the 16th century.
- **Protection:**
  - Dima Hasao district and Karbi Anglong both enjoy the **Sixth Schedule status** granted by the Constitution of India.
  - They are run by the North Cachar Hills Autonomous Council (**NCHAC**) and the Karbi Anglong Autonomous Council (**KAAC**) respectively.
    - The Autonomous Council is a powerful body and almost all the departments of government are under its control **except the police and Law & Order** are under Assam Government.

### A seed festival aims to help tribal Kondh farmers in Odisha return to their agricultural traditions

Bihan Mela:

- It is known as **the seed festival** and the event is participated by the farmers.
- Preparations begin as soon as farmers have harvested Kharif crops, which include both hybrid and indigenous varieties of paddy, millets, maize and sorghum.
- Women are at the helm of this festival and **carefully collect seeds of the indigenous varieties and store them in earthen pots**.
- On a designated day in December, they **decorate the pots with red and white motifs**, place them in a bamboo basket and carry it on their head to the village where the fair is being organised.
- This was introduced to help farmers **return to their traditional ways of farming** like mixed cropping.

Kondh tribe

- They are a tribal group found in the **hills and jungles of Orissa in eastern India**.
- They fall into two broad divisions.
  - **The Hill or Maliah Konds**, who are numerically the dominant group, inhabit the interior uplands and have retained much of their original tribal culture.
  - **The Plains Konds** have had extended contact with the Oriya-speaking peoples of the lowlands and have adopted many aspects of Hindu religion and culture.
- They have several sub-tribes, for instance, the Dongria, Kovi, Kuttia, Languli, Penga, and Jharnia. Raj Konds etc.
- These tribal people speak languages called **Kui and Kuvi**.
- These belong to the Dravidian language family and have **strong similarities to Telugu, Tamil, and Kannada**.
- The language **has no script of its own**, with the Oriya script used for writing Kui, and the Telugu script used for Kuvi.



## FACTS FOR PRELIMS

### PM Modi invited to France for Bastille Day parade

- The Bastille Day military parade, also known as the **14 July military parade**, is a **French military parade** that has been held on the morning of 14 July each year in Paris **since 1880**.
- It is also **one of the oldest regular military parades** in the world.
- July 14 is the **anniversary of the storming of the infamous Bastille prison in 1789** - a **turning point for the success of the French Revolution**.
- This day is marked as the **National Day of France**.

### Curious case of 'missing' areas in Pobitora sanctuary in Assam

Pobitora wildlife sanctuary:

- Pobitora Wildlife Sanctuary is situated in the flood plains of River **Brahmaputra** in the district of Morigaon in the **state of Assam**.
- It harbors the **highest density of Rhino** in the world and the second highest concentration of Rhino in Assam after Kaziranga National Park.
- It is often called '**Mini Kaziranga**' because of the similar landscape and the sizeable population of the one-horned rhino.
- **Fauna:** Leopard, Leopard cat, Fishing cat, Jungle cat, Feral Buffalo, Wild pigs, Chinese pangolins, etc.
- **Flora:** Its maximum consists **of the wet savannah** of *Arundo donax* and *Saccharum*. The remaining area is covered by water bodies.

### India US to sign Rs 2400 crore deal for missiles, torpedoes for Indian Navy

Mark 54 Anti-Submarine Torpedo:

- The MK 54 **lightweight torpedo** is the **primary anti-submarine warfare weapon used by U.S. Navy** surface ships, fixed-wing aircraft and helicopters.
- It was **developed by Raytheon Integrated Defense Systems in collaboration with the US Navy**.
- It was previously **known as Lightweight Hybrid Torpedo (LHT)**.
- It is used in **both deep and shallow waters**, as well as in acoustic environments.
- It is **capable of tracking, classifying and attacking underwater targets**.
- **Features:**
  - The torpedo has a **length of 2.71m**, a **diameter of 32.3cm** and **weight of 275.7kg**.
  - The **warhead** carried by the weapon is **high explosive and weighs 43.9kg**.
  - It is **powered by a reciprocating external combustion engine**, which burns

- Otto II liquid fuel.
- The propulsion system allows the torpedo to **cruise at a speed of 74.1km per hour.**
- MK 54 torpedoes are **equipped with processing algorithms that help them in detecting false targets** or countermeasures and then hunt the identified threats.

### Kamarajar Port to be able to handle cape size vessels in a few years

- Kamarajar Port (erstwhile **Ennore Port**) is the **12th major port of India.**
- It is located on the **Coromandel Coast** about 24 km north of **Chennai, Tamil Nadu.**
- It is the **only corporatized major port in India** and is **registered as a company.**
- The port was **declared as a major port under the Indian Ports Act, 1908** in March 1999.

### World Energy Transitions Outlook 2022

- The global **energy transition is still “off-track”** and falls short of the 1.5 degrees Celsius pathway.
- To keep 1.5°C alive, deployment levels must grow from **some 3,000 gigawatts (GW)** at present to over 10,000 GW in 2030, an average of 1,000 GW annually”.
- Public sector intervention is required to channel investments towards countries more equitably.
- Global investment in energy transition technologies reached a new record of \$1.3 trillion in 2022, yearly investments must more than quadruple to over \$5 trillion to stay on the 1.5 degrees Celsius pathway.
- By 2030, cumulative investments must amount to USD 44 trillion, with transition technologies representing 80 per cent of the total, or \$35 trillion, “prioritising **efficiency, electrification, grid expansion and flexibility”**”.
- Current pledges and plans fall well short of IRENA’s 1.5°C pathway and will result in an emissions gap of 16 gigatonnes (Gt) in 2050.

### International Renewable Energy Agency (IRENA)

- The International Renewable Energy Agency (IRENA) is an **intergovernmental organisation** that supports countries in their transition to a sustainable energy future.
- It was officially founded in Bonn, Germany, on 26 January 2009.
- Its head quarter is in **Abu Dhabi United Arab Emirates.**
- Its membership comprises 167 countries and the European Union.
- In 2009, **India** has become the **77th Founding Member of this organization.**
- It is an official **United Nations observer.**

## Goa to release rescued black panther in Netravali Wildlife Sanctuary

Netravali Wildlife Sanctuary:

- It is situated in the Sanguem Taluka in **Eastern Goa**.
- River Netravali or Neturli originates in this sanctuary which is an important tributary of the **Zuari River**.
- To the **north** of the Netravali wildlife sanctuary lie the **Bhagwan Mahavir Wildlife Sanctuary** and the **Cotigao Wildlife Sanctuary** lies to its
- It has two all-season **waterfalls**, namely **Savri and Mainapi**.
- **Flora:** The forest is a predominantly **moist deciduous type** with patches of **semi-evergreen forest in the valleys**. The high-altitude areas in the hills have natural grassy patches that provide ideal habitat for the herbivorous population.
- **Fauna:** Indian gaur, spotted deer, sambar deer, barking deer, wild boar, and black-faced langur. the Great Pied Hornbills, Black Panther, Slender Loris and the Giant Squirrel.

## US details new \$2.6 bn military aid package for Ukraine

High Mobility Artillery Rocket Systems (HIMARS):

- It is a **light multiple rocket launcher**.
- It is **manufactured by Lockheed Martin** Corporation, a US-based security and aerospace company.
- **Features:**
  - It is an **air-transportable wheeled launcher mounted on 5-ton Family of Medium Tactical Vehicles (FMTV)**.
  - It can **fire six guided missiles in quick succession**.
  - Himars fires **GPS-guided missiles** which can be **more accurately targeted**.
  - **Range:**
    - The missiles **supplied to Ukraine** have a range of **up to 50 miles (80 km)**.
    - Himars **can also fire a single Army Tactical Missile System missile**, which has a **range of 186 miles (300 km)**.

## Sikkim Avalanche Highlights: 7 dead, at least 150 trapped at Nathu La; no respite from snow soon

Nathu La Pass:

- **Location:** It is a mountain pass in the **Himalayas in the East Sikkim district**.
- **Altitude:** It is situated at an altitude of **4302 m** and is **one of the highest motorable roads in the world**.
- Nathu means "listening ears", and La means "pass" in Tibetan. It forms a **part of an**

- **offshoot of the ancient Silk Road.**
- Nathu La **connects the Indian state of Sikkim with China's Tibet Autonomous Region.**
- It is **guarded** on both sides by **Chinese and Indian soldiers.**
- Nathu La is **one of the three open trading border posts between India and China; the other two** are in Himachal Pradesh (**Shipkila**) and Uttarakhand (**Lipulekh**).
- **Sealed by India after the 1962 Sino-Indian War**, Nathu La was **re-opened in 2006** following numerous bilateral trade agreements.

### India to step up support for Bhutan's five-year plan, work for expediting rail link project

Chhukha Hydroelectric Project:

- It is a **run-of-the-river reservoir-based project.**
- **Location:** It is located in the **Wangchu River/basin in Chukha, Bhutan.**
- **Installed capacity: 336 MW.**
- It was **built by the Government of India (GoI)** at the cost of Rs\*\*. 246 crores.\*\*
- The **GoI fully funded** this project with a **60 per cent grant** and a **40 per cent loan.**
- The project construction commenced in 1979 and subsequently entered into **commercial operation in 1986.**
- **Power Purchase Agreement: The power** generated from the project is **sold to the Eastern Regional Power Grid of India** under a power purchase agreement.

### Indigenous Idu Mishmis are protesting a proposed tiger reserve in Arunachal Pradesh

Dibang Wildlife Sanctuary:

- **Location:** It is located nearby Anini district, **Arunachal Pradesh.**
- It has been named after the **Dibang River**, a tributary of Brahmaputra River.
- It occupies **part of the Eastern Himalayas**, and is a massive spread of lofty mountains, snow covered peaks, deep gorges, lush forests and glistening rivers.
- Its **altitude** ranges between **1800m and 5000m.**
- **Flora:**
  - The two main categories of vegetation are **temperate broad leaved forest** and **temperate conifer forest** (Rhododendra, Bamboo, Gregaria, Tsuga etc).
  - Alpine vegetation occurs at higher altitude with herbs, stunted trees and dwarf bushes.
- **Fauna: Mishmi takin, asiatic black bear, tigers, gongshan muntjac, red panda, red goral and musk deer.**

### Hubble Telescope Finds Double Quasar in Early Universe

Quasar:

- A quasar is an extremely **active and luminous type of active galactic nucleus (AGN)**.
- An AGN is nothing more than a supermassive black hole that is active and feeding at the center of a galaxy.
- The brightest **quasars can outshine all of the stars in the galaxies** in which they reside, which makes them visible even at distances of billions of light-years.
- Quasars are thought to **form in regions of the universe where the large-scale density of matter is much higher than average**.
- Most quasars have been **found billions of light-years away**.
- Quasars **emit energies of millions, billions, or even trillions of electron volts**. This energy exceeds the total of the light of all the stars within a galaxy.

### What is the UN Water Conference and why is it so important?

W12+ Blueprint:

- It is a UNESCO platform that hosts city profiles and case studies of programs, technologies, and policies that address common water security challenges.
- It is **an informational database** for solutions to **urban water challenges**.
- **Aim:** To create a tool that provides insight into how to address common urban water challenges through easy-to-read case studies.
- Lessons learned from the other W12+ Programs will be incorporated and highlighted within the Blueprint.
- It will house information on best practices, encourage further knowledge exchange, and become a "virtual Hub" for urban water security solutions globally.
- Cities listed under this blueprint from India are **Chennai, Bengaluru, Mumbai and Pune**.

### Landslide hits Subansiri Dam project

Subansiri Dam project:

- It is the biggest hydroelectric project undertaken in India so far.
- It is a **run-of-river scheme** on **river Subansiri**.
- **Location:** The Project is located near North Lakhimpur on the border of **Arunachal Pradesh and Assam**.
- Capacity: 2000MW
- It is a **concrete gravity dam** 116 m high from river bed level.
- It is being developed by the state-run **National Hydro Power Corporation (NHPC)**.

Subansiri River

- It originates in the **Tibet Plateau** and is the largest tributary of the **Brahmaputra River**.
- The high topographic variation makes this river a potential zone for harnessing it for

the hydropower

Gravity dam

- Gravity dams are massive structure dams which are constructed of **concrete or stone masonry**.
- This type of structure is **durable** and requires very **little maintenance**.

### Mission to map rural India's cultural assets covers over one lakh villages

National Mission for Cultural Mapping:

- It was launched in 2017 by the **Union Ministry of Culture**
- **Aim:** To develop a comprehensive database of art forms, artists and other resources across the country.
- The government has identified and documented distinctive features of more than one lakh villages across the country.
- In this cultural asset mapping, villages have been **broadly divided into seven-eight categories** based on mythological ecological, developmental and scholastic importance.
- The Culture Ministry had approved a budget of ₹469 crores for the mission in 2017 **for a period of three years**.
- Detailed field surveys were carried out by joint teams of the Culture Ministry and the Common Services Centres (CSC), under the Ministry of Electronics and Information Technology.

### Int'l Trade Union Confederation calls WBG, IMF to overhaul multilateral system, act for sustainable recovery

- It is an organization **established in 2006**, that **promotes the trade union movement**.
- It **represents 176 million workers in 161 countries** and territories and has 325 national affiliates.
- **Mission: Promotion and defence of workers' rights and interests**, through international cooperation between trade unions, global campaigning and advocacy within the major global institutions.
- Its main **areas of activity** include the following: **trade union and human rights; economy, society and the workplace; equality and non-discrimination;** and international solidarity.
- It is **governed by four-yearly world congresses**, a **General Council** and an **Executive Bureau**.
- It **works closely with the International Labour Organisation** and with several other UN Specialised Agencies.
- **Headquarters: Belgium**

## What was the U.N. water conference and what happened there?

Hydrological Status and Outlook System (HydroSOS):

- It is an important initiative envisioned by the Commission for Hydrology and is now overseen by the **WMO Hydrological Assembly**.
- **Aim:** To provide the crucial global scale information needed to help water users understand the current status of the world's freshwater systems.
- The System will be delivered by **National Meteorological and Hydrological Services (NMHSs)**, offering simple, accessible hydrological information to users such as government bodies, basin managers, funding institutions etc.
- It is being developed in phases, with the first one being a **pilot phase (2017-2021)**.
- Under this phase, pilot basins have been identified in Africa and South Asia.

World Meteorological Organisation

- It is a **specialized agency** of the **United Nations(UN)**.
- It originated from the International Meteorological Organization (IMO), which was founded in 1873.
- Established in 1950, WMO became the specialized agency of the UN for meteorology (weather and climate), operational hydrology and related geophysical sciences.
- **Headquarters:** Geneva,
- Currently, it has a membership of **187 countries**.

## A Beginner's Guide To Spotting Flamingos In Mumbai

Sewri fort

- It is a fort in **Mumbai built by Britishers in 1680** at Sewri, **Island of Parcel**.
- It was served as **watch tower**, atop a quarried hill overlooking the **Mumbai Harbour**.
- In 1689, The Siddi general **Yadi Sakat** invaded Mumbai and they first captured the sewri Fort. The Siddhis were **allies of Mughal emperor Aurangzeb**.
- This fort is later also involved in the **battle that repelled The Portuguese attack in 1772**.
- In **1818, after British-Maratha wars**, the strategic importance of the fort declined.
- It was later used as a jail, but today it stands neglected in many parts. Still, parts of the fort have been protected by the state's department of archaeology and museums.
- It serves as the site of the **annual Flamingo Festival**.

## UP's Suhelwa sanctuary records first photographic proof of tigers

Suhelwa Wildlife Sanctuary:

- It is located in the state of **Uttar Pradesh**.

- It is one of the important places in the **Bhabar-Tarai Eco-System area** which is rich in biodiversity.
- The Sohelwa Wild Life Division is **situated on the Indo-Nepal International Border**.
- **Flora:** The main tree species are Sal, Asna, Khair, Teak etc. The Sanctuary area is very rich in **medicinal plants**. Some species of medicinal plants are white Musuli, Black Musuli, Piper longum, and Adhatoda vasica etc found here.
- **Fauna:** Different types of mammals are found here viz. Leopard, Bear, Wolf, Hyena, Jackal, Wild Boar, Sambhar, Spotted Deer etc.

#### Bhabar region

- The Bhabar region is a narrow strip of land located **in the Northern Plains of India**.
- As the rivers originating from the mountains flow down, they deposit pebbles in this region.
- It runs parallel to the **slopes of the Shiwaliks** and has a width of around 8 to 16 kilometres.

#### Terai Region

- It is South of the Bhabar region where **the streams and rivers re-emerge** and create a wet, swampy and marshy region known as terai.

#### Krishnarajapuram and Whitefield railway stations to be revamped under Amrit Bharat Station scheme

- It envisages **development of stations on a continuous basis with a long term vision**.
- It is **based on Master Planning for long term** and implementation of the elements of Master Plan **as per the needs and patronage of the station**.
- **Broad Objectives:**
  - Implementation of the Master Plan in phases to enhance **the facilities including and beyond the Minimum Essential Amenities (MEA)** and aiming for **creation of Roof Plazas and city centres** at the station in long run.
  - The scheme shall **aim to meet the needs of the stakeholders, station usage studies** as far as possible based on availability of funds and inter-se priority.
  - The scheme shall **cater for introduction of new amenities** as well as upgradation and **replacement of existing amenities**.
  - It will also **cover the stations where detailed techno-economic feasibility studies have been conducted or are being conducted** but the work for **construction of Roof Plazas has not been taken up yet**, ensuring the phasing of Master Plan being suitably implemented.
  - Attempts shall be made to **club different grades/types of waiting halls and provide good cafeteria/retail facilities** as far as possible
  - **High level platforms**(760-840 mill meter) shall be provided at all categories of stations.
  - Station **approaches shall be improved** to ensure smooth access by widening of roads, removal of unwanted structures, properly designed signages,



- dedicated pedestrian pathways, well planned parking areas, improved lighting etc.
- **Amenities for Divyangjan at stations shall be as per guidelines issued by Railway Board** from time to time.

### IAF to join multilateral exercise in Greece

- The Indian Air Force (IAF) will be participating in Exercise **INIOCHOS-23**,
- A multi-national air exercise hosted by the Greece Air Force from April 24 to May 4.
- This will be the third exercise that the IAF will be taking part simultaneously. The Exercise **Cope India** with the U.S. is under way at Kalaikunda and four Rafale fighters are taking part in multilateral **exercise Orion** hosted by France.
- The exercise will be conducted at the Andravida Air Base in Greece and the IAF will be participating with four Su-30 MKI and two C-17 aircraft.
- The objective of the exercise is to enhance international cooperation, synergy and interoperability amongst the participating Air Forces

### India conducts successful trial of BMD interceptor missile

- India has successfully conducted the maiden flight trial of a sea-based endo-atmospheric interceptor missile off the coast of Odisha. The missile test was conducted by the Defence Research and Development Organisation (DRDO)
- "The trial was to engage and neutralise a hostile ballistic missile threat, thereby elevating India into the elite club of nations having Naval BMD capability," the Ministry of Defence said.

### Insomnia linked to risk of heart attack, especially in women

- People who suffer from insomnia were 69% more likely to have a heart attack compared to those who didn't have the sleep disorder during an average nine years of follow-up, according to new research
- when looking at sleep duration as an objective measure of insomnia, researchers found that people who clocked five or fewer hours of sleep a night had the greatest risk of experiencing a heart attack. People with both diabetes and insomnia had a twofold likelihood of having a heart attack.

Insomnia:

- **What is it?** It is a **common sleep disorder that can make it hard to fall asleep**, hard to stay asleep or cause you to wake up too early and not be able to get back to sleep.
- The condition **can be short-term (acute) or can last a long time (chronic)**. It may also come and go.

- Acute insomnia **lasts from 1 night to a few weeks**. Insomnia is **chronic when it happens at least 3 nights a week for 3 months or more**.
- It **affects women more than men** and older people more than younger ones.
- Insomnia may play a role in the development of chronic diseases, such as: obesity, diabetes, cardiovascular disease, depression.
- **Types of Insomnia:**
  - **Primary insomnia:** This means **your sleep problems aren't linked to any other health condition** or problem.
  - **Secondary insomnia:** This means you have **trouble sleeping because of a health condition** (like asthma, depression, arthritis, cancer, or heartburn); pain; medication; or substance use (like alcohol).
- **Causes:**
  - **Stress-related to big life events**, like a job loss or change, the death of a loved one etc.
  - **Things around you**, like noise, light, or temperature
  - **Changes to your sleep schedule** like jet lag, a new shift at work, or bad habits you picked up when you had other sleep problems.