

CivilsTap

Quality & Affordable Education



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By CivilsTap Himachal

FOR HPAS &
other competitive
Exam in
Himachal Pradesh

Prelims

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1. POLITY

1.1 ANTI DEFECTION LAW

- ❖ The Supreme Court has directed Maharashtra Assembly Speaker to decide disqualification petitions filed under the Tenth Schedule (anti-defection law) of the Constitution against the Chief Minister Eknath Shinde camp in the Shiv Sena dispute by December 31, 2023.
- ❖ A three-judge Bench led by Chief Justice D.Y. Chandrachud ordered the Speaker, in his capacity as a tribunal under the Tenth Schedule, to decide the disqualification petitions against the breakaway faction headed by Deputy Chief Minister Ajit Pawar in the Nationalist Congress Party (NCP) dispute by January 31, 2024.
- ❖ The Chief Justice said the need to bind the Speaker to deadlines had come after giving him repeated opportunities to conclude the disqualification proceedings.

ABOUT ANTI DEFECTION LAW

- ❖ The 10th Schedule of the Constitution is designed to prevent defection of elected and nominated members of Parliament and state legislatures from their political parties and contains stringent provisions against it.
- ❖ The Tenth Schedule - popularly known as the Anti-Defection Act - was included in the Constitution via the 52nd Amendment Act, 1985.
- ❖ Grounds of Disqualification-
 - ✓ If an elected member voluntarily gives up his membership of a political party.
 - ✓ If he votes or abstains from voting in such House contrary to any direction issued by his political party or anyone authorized to do so, without obtaining prior permission.
 - As a pre-condition for his disqualification, his abstention from voting should not be condoned by his party or the authorized person within 15 days of such incident.
 - ✓ If any independently elected member joins any political party.
 - ✓ If any nominated member joins any political party after the expiry of six months.
- ❖ Although, if two-thirds of the members agree to a merger with another party, they will not be disqualified.
- ❖ Presently, the Law does not provide a time limit within which the Speaker/Presiding officers have to decide on the anti-defection case.

1.2 1.ELECTORAL BONDS

- ❖ A five-judge Constitution bench, headed by Chief Justice of India has stated that Electoral Bond scheme suffers from “selective anonymity” leading to an “information hole”.
- ❖ It has also directed the Election Commission of India (ECI) to submit within two weeks complete information on each and every donor and contributions received by political parties through EBs till September 30, 2023.

ABOUT ELECTORAL BOND SCHEME

- ❖ Electoral bonds are interest-free bearer bonds or money instruments that can be purchased by companies and individuals in India from authorised branches of the State Bank of India (SBI).
- ❖ Bonds are available for purchase in multiples of ₹1,000, ₹10,000, ₹1 lakh, ₹10 lakh and ₹1 crore.
- ❖ These can be bought through a KYC-compliant account.
- ❖ There is no limit on the number of electoral bonds that a person or company can purchase.
- ❖ Every party registered under section 29A of the Representation of the People Act and having secured at least 1% of the votes polled in the most recent Lok Sabha or state election has been allotted a verified account by ECI.
- ❖ The political party has to encash the amount within those 15 days, otherwise the amount received as a donation gets deposited into the Prime Minister's Relief Fund.
- ❖ The government brought in amendments to four Acts-

- ✓ **Representation of the People Act, 1951, the Companies Act, 2013, the Income Tax Act, 1961, and the Foreign Contributions Regulation Act, 2010, through the Finance Acts of 2016 and 2017.**
- ✓ **The government removed the limit of 7.5 per cent of the annual profit for companies to make donations to political parties and allowed Indian subsidiaries of foreign companies to make donations.**
- ❖ **EBs are available for a period of 10 days in a gap of four months (January, April, July and October).**
 - ✓ **They are also open for 30 days in Lok Sabha election years.**

1.3 EMCORE BY ECI

- ❖ **The Election Commission of India has designed in-house software for complete Candidate and election management through 'EMCORE' which stands for Enabling Communications on Real-time Environment.**
- ❖ **This provides a seamless facility for Returning Officers to process candidate nomination, affidavit, Voter turnout, counting, results and data management.**
- ❖ **The EMCORE counting application is an end-to-end application for returning officers to digitize the votes polled, tabulate the round-wise data and then take out various statutory reports of counting.**
- ❖ **Another application called EMCORE Scrutiny Application allows Returning Officers to do scrutiny of the nominations filed by the candidates on-line.**
- ❖ **An application called candidate Affidavit portal is for displaying information about a candidate's finances, assets and their liabilities.**
- ❖ **Through the EMCORE Nodal App, various departments like fire, education, police, environment, CPWD give 'no objection' certificate before any permission request from political party or candidates, received for holding rallies, road shows and meetings.**

1.4 ADVOCATE ON RECORD

- ❖ **The Supreme Court this week pulled up an Advocate-on-Record (AoR) for filing a frivolous case and dismissed the public interest litigation.**
- ❖ **The Court censured the lawyer that an AoR cannot merely be a "signing authority."**

ABOUT AOR

- ❖ **Only an AoR can file cases before the Supreme Court.**
- ❖ **An AoR might engage other lawyers including senior counsels to argue before the Court but the AoR is essentially the link between the litigant and the highest court of the country.**
- ❖ **Simply put, AORs are a pool of elite Delhi-based lawyers whose legal practice is mostly before the SC.**
 - ✓ **They can appear before other courts too.**
- ❖ **The idea behind this practice is that a lawyer with special qualifications, picked by the Supreme Court itself, is equipped to appear for a litigant because it is a court of the last opportunity for the litigant.**
- ❖ **The Supreme Court Rules, 2013 prescribe eligibility criteria for an AoR.**
 - ✓ **The advocate must train with a court approved AoR for at least one year to take up the exam.**
 - ✓ **He/she must also have at least four years of practice before starting the training itself.**
 - ✓ **An advocate needs to score at least 60% i.e. a minimum of 240 marks out of 400 with at least 50% in each subject in a three-hour exam.**
 - ✓ **The subjects include Practice and Procedure, Drafting, Professional Ethics and Leading Cases.**
 - ✓ **An AoR must have an office in Delhi within a 16-kilometre radius of the SC.**
 - ✓ **Additionally, he/she is required to give an undertaking to employ, within one month of being registered as an AoR, a registered clerk.**

Under Article 145 of the Constitution, the Supreme Court is empowered to make rules and regulate its own procedure for hearing cases.

1.5 ELECTORAL TRUSTS

- ❖ Under the scheme notified by government on January 31, 2013, any company registered under Section 25 of the Companies Act, 1956, can form an electoral trust.
- ❖ Under Section 17CA of the Income-tax Act, 1961, any citizen of India, a company registered in India, or a firm or Hindu Undivided Family or association of persons living in India, can donate to an electoral trust.
- ❖ The electoral trusts have to apply for renewal every three financial years.
- ❖ They must donate 95% of contributions received in a financial year to political parties registered under the Representation of the People Act, 1951.
- ❖ The contributors' PAN (in case of a resident) or passport number (in case of an NRI) is required at the time of making contributions.
- ❖ The electoral trusts route is transparent on contributors and beneficiaries.
- ❖ Where there is only one contributor and one beneficiary of a particular trust, the public can know for sure who is funding whom.

1.6 NATIONAL INSTITUTE OF DISASTER MANAGEMENT (NIDM)

- ❖ The National Institute of Disaster Management (NIDM) has been recognised as a global 'centre of excellence' in the domain of landslide disaster reduction.
- ❖ The institute has been recognised as a World Centre of Excellence on Landslide Risk Reduction (2023-2026) during the sixth world landslide forum held in Florence, Italy.

ABOUT NIDM

- ❖ The NIDM, is a statutory body that functions under the Disaster Management Act of 2005
- ❖ One of the NIDM's key responsibilities is to create human resources, enhance capacities, give training, conduct research, document disaster management projects, and lobby for legislative changes.
- ❖ The Institute works with a variety of ministries, state governments, and municipal governments, as well as academic, research, and technical institutions in India and overseas, to achieve its objectives.
- ❖ NIDM also provides capacity building support to a variety of national and state-level agencies.
- ❖ Ministry of Home Affairs is the nodal ministry.
- ❖ NIDM President- Union Minister of Home Affairs

1.7 SPECIAL CATEGORY STATES

- ❖ Bihar Cabinet has recently passed a resolution seeking special category status to State.
- ❖ Niti Aayog, in its first 'Multi-dimensional Poverty Index' (MPI) report, ranked Bihar as the poorest state in India, estimating that nearly 52 per cent of its population did not have access to requisite health, education and living standards.

ABOUT SCS

- ❖ Special category status is generally granted to States which face geographical and socio-economic disadvantages, such as those which
 - ✓ lie along an international border,
 - ✓ have hilly terrain,
 - ✓ a sizable share of tribal population,
 - ✓ suffer from economic and infrastructural backwardness or
 - ✓ non-viable nature of state finances.
- ❖ Such States receive a higher share of Central funding and financial support for development purposes.
- ❖ The 'special category' status to a state, first introduced in 1969 by 5th Financial Commission, allows preferential treatment in the form of Central assistance and tax breaks, establishing special development boards, reservation in local government jobs, educational institutions, etc. to disadvantaged states.

- ✓ This formula was named after the then Deputy Chairman of the Planning Commission, Dr Gadgil Mukherjee and is related to the transfer of assistance to the states by centre under various schemes.
- ❖ Initially, three states—Assam, Nagaland and Jammu & Kashmir—were granted special category status.
 - ✓ Since then, eight more have been included—Arunachal Pradesh, Himachal Pradesh, Manipur, Meghalaya, Mizoram, Sikkim, Tripura and Uttarakhand.
- ❖ After the dissolution of the planning commission and the formation of NITI Aayog, the recommendations of the 14th Finance Commission were implemented which meant the discontinuation of the Gadgil formula-based grants.
 - ✓ The 14th Finance Commission effectively removed the concept of special category status.

CONSTITUTIONAL BACKING

- ❖ The Constitution of India does not include any provision for the categorization of any state in India as a 'special category state'.
- ❖ However, a wide range of provisions are available to as many as 10 states that have been listed under Articles 371, 371-A to 371-H, and 371-J.

1.8 NINTH SCHEDULE

- ❖ The Bihar government has urged the Centre to incorporate the hiked reservation for deprived castes from 50 to 65 per cent in state government jobs and educational institutions in the 9th schedule of the Constitution, so that it is guaranteed immunity from legal scrutiny.
- ❖ The Ninth Schedule of the Constitution includes a list of Central and state laws that cannot be challenged in courts.
 - ✓ It was added by Constitution (First Amendment) Act, 1951.
- ❖ In 1992 Indra Sawhney v Union of India verdict, the Supreme Court had capped reservations for the backward classes at 50 per cent.

I R COELHO V. STATE OF TAMIL NADU (2007) JUDGEMENT

- ❖ The nine-judge bench had delivered a unanimous verdict on January 11, 2007 in Coelho v. State of Tamil Nadu and others case, upholding the 'Basic Structure Doctrine'.
- ❖ The authority of the judiciary to review any such laws, which destroy or damage the basic structure as indicated in Art.21 read with Art.14, Art.19 and the principles underlying there under, are open to judicial scrutiny, even if they have been put in 9th Schedule after April 14, 1973.
- ❖ This case is popularly known as The Ninth Schedule Case.

1.9 DELIMITATION COMMISSION

- ❖ The Supreme Court has directed the Centre to set up a fresh delimitation commission to ensure a proportional representation of the communities specified as Scheduled Castes (SCs) and Scheduled Tribes (STs), as mandated under the Constitution.
- ❖ The directions were issued by a bench of Chief Justice D Y Chandrachud and Justices J B Pardiwala and Manoj Misra on a plea seeking a proportionate representation of the Limbu and Tamang tribal communities in the assemblies of Sikkim and West Bengal.
- ❖ The plea sought directions to the Centre, Election Commission and the two States to take steps for a proportional representation of the STs, as guaranteed
 - ✓ under articles 330 (reservation of seats for SCs and STs in the House of People) and
 - ✓ 332 (reservation of seats for SCs and STs in Legislative Assemblies of States) of the Constitution, to prevent a violation of Article 14 (equality before law).

ABOUT DELIMITATION COMMISSION

- ❖ Delimitation literally means the **act or process of fixing limits or boundaries of territorial constituencies in a country or a province having a legislative body.**
- ❖ The **job of delimitation is assigned to a high power body.** Such a body is known as **Delimitation Commission** or a **Boundary Commission.**
- ❖ Composition-
 - ✓ A **SC judge (Current or retired) acts as Chairman**
 - ✓ The **Chief Election Commissioner of India** or an **Election Commissioner nominated by him/her.**
 - ✓ **Respective State's Election Commissioner.**
- ❖ In India, such **Delimitation Commissions have been constituted 4 times** – in 1952, 1963, 1973 and in 2002.
- ❖ The **Delimitation Commission in India is a high power body whose orders have the force of law and cannot be called in question before any court.**
- ❖ These orders **come into force on a date to be specified by the President of India in this behalf.**
- ❖ The **copies of its orders are laid before the House of the People and the State Legislative Assembly concerned, but no modifications are permissible therein by them.**

42nd Constitutional Amendment (1976) froze this delimitation exercise until the first Census after 2000 was published.

In 2002, the 84th Constitutional Amendment further extended the freeze till 2026.

1.10 ALL INDIA JUDICIAL SERVICES

- ❖ The President has favoured the **creation of an All-India Judicial Service (AIJS) to pick judges from varied backgrounds through a process, which should be merit-based, competitive and transparent.**
- ❖ **Presently, selection to the district and subordinate judiciary is done by state governments in consultation with the respective high courts with jurisdiction in that state.(Article 233)**
- ❖ **Article 312 of the Constitution provides for the establishment of All India Judicial Service (AIJS), which shall not include any post inferior to that of a District Judge.**
- ❖ **Backdrop**
 - ✓ In 1958, the **14th report of the Law Commission of India had recommended the creation of the AIJS.**
 - ✓ The recommendation for the creation of AIJS was **once again given by the Law Commission in its 77th report which was submitted in 1978 and in its 116th report which was submitted in 1986.**
 - ✓ In **1992, the Supreme Court also endorsed the concept of the AIJS, asking the Union government to assess its feasibility.**
- ❖ However, some high courts and state governments have opposed the proposal.
 - ✓ Their **key concerns were the dilution of the federal structure, and no address to structural issues plaguing the lower judiciary, including low pay and fewer chances of being promoted to the higher judiciary.**
- ❖ **Need of AIJS-**
 - ✓ Over **5000 posts of Judges are currently vacant** in the lower judiciary.
 - ✓ Nearly **85% of the pending cases are at the level of the District Judiciary** amounting to more than 2.5 crore pending cases.
 - ✓ **Favors better representation from all sections of society.**

1.11 NEW JUDICIAL INITIATIVES

FASTER 2.0

- ❖ Keeping up with the technology adoption to streamline the justice delivery system, the **Chief Justice of India (CJI) launched the 'FASTER 2.0' portal recently.**
- ❖ The **new portal is designed to promptly inform jail authorities, trial courts, and high courts about court orders for the release of prisoners.**
- ❖ The new digital facility **looks to plug the delay in the present system, which currently is much time taking as this is based on physical orders copies that are to be officially received via formal government channels before the jail authorities.**

- ❖ The 'FASTER 2.0' portal is now live and facilitates instant communication to the concerned authorities, enhancing the efficiency of the justice system.

E-SCR PORTAL

- ❖ In addition to the 'FASTER 2.0' initiative, CJI also unveiled a Hindi version of the e-SCR portal.
- ❖ This portal allows access to Supreme Court judgments in Hindi, making legal information more accessible and inclusive.
- ❖ The Supreme Court's eSCR website that contained Hindi translations of 21,388 judgments of a total 36,068 judgments delivered so far by the Supreme Court since January 26, 1950.
 - ✓ The rest of the judgments are in the process of being translated into Hindi and would be uploaded after vetting.
- ❖ All the judgments in English are already available free of cost to judges, lawyers, litigants and the general public on eSCR portal.

2. ECONOMY

2.1 EMPLOYEES' PROVIDENT FUND ORGANISATION

- ❖ The 71st Foundation Day of EPFO was held at Bharat Mandapam, New Delhi recently.

ABOUT EMPLOYEES' PROVIDENT FUND ORGANISATION

- ❖ EPFO is one of the World's largest Social Security Organisations in terms of clientele and the volume of financial transactions undertaken.
 - ✓ At present it maintains 27.74 crore accounts (Annual Report 2021-22) pertaining to its members.
- ❖ The Employees' Provident Fund came into existence with the promulgation of the Employees' Provident Funds Ordinance on the 15th November, 1951.
 - ✓ It was replaced by the Employees' Provident Funds Act, 1952.
- ❖ The Act is now referred as the Employees' Provident Funds & Miscellaneous Provisions Act, 1952 which extends to the whole of India.
- ❖ The Act and Schemes framed there under are administered by a tri-partite Board known as the Central Board of Trustees, Employees' Provident Fund, consisting of representatives of Government (Both Central and State), Employers, and Employees.
 - ✓ The Central Board of Trustees administers a contributory provident fund, pension scheme and an insurance scheme for the workforce engaged in the organized sector in India.
- ❖ The EPFO is under the administrative control of Ministry of Labour and Employment.

2.2 EESL NEW INITIATIVES

- ❖ Energy Efficiency Services Limited (EESL) announced the launch of two nationwide programmes aimed at bolstering energy efficiency in households, marking a key step towards reducing environmental impacts.
- ❖ The two new initiatives are-
 - ✓ **National Efficient Cooking Programme (NECP)**
 - ✓ The National Efficient Cooking Programme (NECP) introduces induction-based cook stoves, which offer a 25-30% cost advantage compared to conventional cooking methods promising both energy savings and cost-effective cooking solutions.
 - ✓ The NECP will deploy 20 lakh such units.
 - ✓ It is a subset of the Clean Cooking Scheme.
 - ✓ **Energy Efficient Fans Programme (EEFP).**
 - EEFP focuses on deploying energy-efficient BLDC fans.
 - Ceiling fans contribute to around 40% of total residential electricity consumption, which accounts for over a quarter of India's overall electricity usage.

- By replacing all current ceiling fans with efficient models, nearly **20% of the total residential electricity consumption can be diminished.**
- **EESL aims to capitalise on this potential for savings by deploying 1 crore 5-star energy-efficient Brush-Less Direct Current (BLDC) ceiling fans across India.**

ABOUT EESL

- ❖ Founded in **2009.**
- ❖ **EESL is promoted by Ministry of Power.**
- ❖ It is a **Joint Venture of four reputed public- sector undertakings - NTPC Limited, Power Finance Corporation Limited, REC Limited and POWERGRID Corporation of India Limited.**
- ❖ **EESL focuses on solution-driven innovation without taking support of any subsidy from the Govt.**
- ❖ It is **one of the main implementation arms of National Mission for Enhanced Energy Efficiency- a mission under the National Action Plan on Climate Change.**

2.3 50 YEAR BOND

- ❖ India debuted its **first-ever 50-year bond(dated government securities or G-Secs) at a cut-off yield of 7.46%.**
- ❖ This is **part of the government's reorganisation of its borrowing profile.**
 - ✓ Reserve Bank of India (RBI) **received bids worth Rs 40,200 crore (4x) for these ultra-long bonds, against the notified amount of Rs 10,000 crore.**
- ❖ **Prior to this, India's longest tenor government bond was the 40-year paper. The cut-off yield on that is close to 7.47%.**
- ❖ **The government plans to raise Rs 6.55 lakh crore in the second half of the current financial year as part of its stated borrowing plan.**
- ❖ **The 50-year bond will be used to raise 4.58% of this target, the government had disclosed earlier.**

Dated G-Secs are securities which carry a fixed or floating coupon (interest rate) which is paid on the face value, on half yearly basis.

2.4 WORLD FOOD INDIA

- ❖ PM recently inaugurated the **second edition of the “World Food India 2023” at Bharat Mandapam in the national capital.**
- ❖ It has been **organized by Ministry of Food Processing Industries.**
- ❖ **The first edition of the event was held in 2017.**
- ❖ It aims to **showcase India as the “food basket of the world” and celebrate 2023 as the International Year of Millets.**
- ❖ **More than 80 countries, 200 speakers and 12 partner ministries, departments and commodity boards took part in the three-day event.**

2.5 CAFRAL PUBLISHES FIRST INDIA FINANCE REPORT

- ❖ **The first edition of the India Finance Report was published by the Centre for Advanced Financial Research and Learning (CAFRAL).**
- ❖ Its theme is **“Connecting the Last Mile: Non-Banking Financial Companies (NBFCs) in India”.**

NBFCs are companies registered under the Companies Act 1956 which provide bank-like financial services but do not hold banking licenses.

MAJOR FINDINGS

- ❖ **It has taken stock of India’s non-bank financial companies sector — commonly called the shadow banking sector — and pointed out both the ongoing improvements and emerging risks.**

- ❖ After the liquidity crisis of 2018 and the Covid pandemic, the NBFC sector has improved, along all dimensions — capital position, asset quality, and profitability.
- ❖ Monetary Policy Transmission through NBFCs is strong but delayed.
- ❖ UPI usage has exponentially increased since its inception in 2016, with its growth outpacing all other modes of digital payments.
 - ✓ A 10% increase in per capita UPI transactions usually leads to a 4.6 per cent rise in fintech lending and 1.5 per cent in lending by commercial banks.
 - ✓ There were over 8.68 billion transactions per month on the UPI network, with over 300 million unique users and close to 400 participating banks, as of March 2023

ABOUT UPI

- ❖ Launched in 2016, UPI allows an instant, real-time payment network and is operated by the National Payments Corporation of India (NPCI).
- ❖ The payment system is built as an "interoperable protocol", which allows third-party vendors to build apps to provide payments as a service.

ABOUT CAFRAL

- ❖ CAFRAL is an independent body set up by the Reserve Bank of India in 2011.
- ❖ It is a not-for-profit organisation that promotes research in the finance, macroeconomics, and public policy.

2.6 NATIONAL COOPERATIVE ORGANICS LTD (NCOL)

- ❖ Minister of Cooperation recently launched the 'Bharat Organics' brand of the newly created National Cooperative Organics Ltd (NCOL) and asserted that it will emerge as the most "trusted" brand in India and abroad.
- ❖ NCOL's logo, website and brochure were also launched.
- ❖ Initially, NCOL will sell the organic products in India and later will market in other countries.

There are 7.89 crore cooperative societies across the country with a total membership of 29 crore.

ABOUT NCOL

- ❖ NCOL has been established under the Multi State Cooperative Societies Act, 2002.
 - ✓ NCOL is one of the three new cooperatives the government has set up recently.
 - ✓ The other two cooperatives work in the field of certified seeds and exports.
- ❖ National Dairy Development Board is the chief promoter.
- ❖ NCOL aims to cover the entire supply chain of organic products through cooperative networks by undertaking various activities like aggregation, certification, production, testing, procurement, storage, processing, branding, packaging, labeling, marketing, etc for the ultimate benefit of farmer members.

CURRENT STATUS

- ❖ Organic agriculture is practiced in 190 countries on 749 lakh hectares of land and India ranks 4th globally in organic agricultural land and first in number of producers as per 2020 data.
- ❖ India has 27 lakh hectares of land under certified organic certification, including cultivable and wild harvest areas.
- ❖ The country produced 29 lakh tonnes of certified organic products in 2022-23, as per the official data.

2.7 PUSA 2090

- ❖ Amid the challenges of paddy stubble burning and air pollution in Delhi- NCR region, the Indian Agricultural Research Institute, Delhi has developed a high-yielding short-duration variety namely Pusa-2090 which will help in dealing with the menace.
- ❖ The new paddy variety is an improved version of currently used Pusa-44.

- ❖ **PUSA-2090 variety matures in only 120 to 125 days** as compared to Pusa-44 which takes 155 to 160 days to mature.
- ❖ The **new paddy variety will give around 30 days time to farmers to ready their fields for the next crop.**
- ❖ It was **developed by crossing Pusa-44 with CB-501, an early-maturing Japonica rice line known for stronger stems and higher grain production.**

2.8 ANNAPURNA CERTIFICATE PROGRAMME

- ❖ The **Annapurna Certificate Programme has recognized six Indian restaurants worldwide for promoting Indian culinary traditions.**
- ❖ These include-
 - ✓ Balaji Dosa in Sri Lanka, Indian Street Food and Co. in Sweden, Amber Restaurant in the United States of America, Naans and Curries in Costa Rica, Mumtaz Mahal in Oman and Namaste in Mongolia.
- ❖ This **annual program acknowledges restaurants contributing to India's cultural cause through cuisine on a global scale.**
- ❖ It is **an initiative by the Indian Council for Cultural Relations (ICCR).**

ABOUT ICCR

- ❖ The Indian Council for Cultural Relations is an **autonomous organisation**, involved in **India's global cultural relations**, through **cultural exchange with other countries and their people.**
- ❖ Founded in **1950**, by **Maulana Abul Kalam Azad**
- ❖ Headquarters- **New Delhi**
- ❖ Registered as a **Society under the Societies Act**, ICCR operates as an **independent body under the administrative control of the Ministry of External Affairs.**

2.9 COCONUT DEVELOPMENT BOARD

- ❖ The **Coconut Development Board (CDB) has launched 'Hello Naariyal' Friends of Coconut Trees (FoCT) call centre facility to help farmers with coconut harvesting and plant management operations.**
- ❖ The initiative aims to **improve the activities of the coconut sector by catering to the needs of coconut farmers in harvesting, coconut tree climbing, plant protection, seed nut procurement, nursery management, etc.**
- ❖ Furthermore, the services **will be extended to states such as Tamil Nadu, Andhra Pradesh and Karnataka.**
- ❖ There are **1,924 registered FoCTs for the call centre.**
- ❖ The **services will be available at block and grama panchayat levels in respective districts.**
- ❖ It will **function from the headquarters of the board in Kochi.**

ABOUT CDB

- ❖ Coconut Development Board (CDB) is a **statutory body** established under the **Ministry of Agriculture and Farmers Welfare.**
- ❖ It was established under the **Coconut Development Board Act, of 1979** and the **Board came into existence in 1981.**
- ❖ Its **mandate is the integrated development of coconut cultivation and industry in the country with focus on productivity increase and product diversification.**

2.10 SEA BUCKTHORN GETS GI TAG

- ❖ In Ladakh, after **GI Tag for Apricot (Raktsey Karpo), Pashmina, and Ladakhi Wood Carving**, the **Geographical Indication Registry** has officially granted the GI tag for **'Ladakh Sea Buckthorn'.**
- ❖ GIR is **operating under the DPIIT, Ministry of Commerce & Industry.**

- ❖ **Sea Buckthorn** is one of the **most profitable crop** of **UT Ladakh** having **90 % production** from **Ladakh in India**.

ABOUT SEA BUCKTHORN

- ❖ Sea Buckthorn (*Hippophae L*) is a **wonder plant** of **Ladakh** and named **‘Leh Berry’** produces **small orange or yellow coloured berries** which are **sour in taste** but **rich in vitamins, especially Vitamin C**.
- ❖ It is **naturally distributed over 11,500 hectares** in the **Ladakh region**.
- ❖ The **shrub can withstand extreme temperatures** from **minus 43 degrees Celsius to 40 degrees Celsius** and is **considered drought-resistant**.
- ❖ Sea Buckthorn berries have a **unique characteristic of remaining intact on the shrub throughout the winter months despite of the subzero temperature**.
- ❖ Many **bird species feed on the berries** when other source of food is **limited in the region**.
- ❖ The **leaves serve as protein-rich fodder** for **cold desert animals** like **sheep, goats, donkeys, cattle, and double-hump camels**.
- ❖ The **thorny and bushy growth** of the shrub provides a **protective shelter** for **flora and fauna** thereby **maintaining the fragile ecosystem of the cold arid region**.
- ❖ Every part of the plant – **fruit, leaf, twig, root, and thorns** has been **traditionally used as medicine, nutritional supplement, fuel and fence**, and therefore, Sea Buckthorn is popularly known as **‘Wonder Plant’, ‘Ladakh Gold’, ‘Golden Bush’ or ‘Gold Mine’ of cold deserts**.

2.11 ONATTUKARA SESAME

- ❖ Efforts are being made to expand the **cultivation of geographical indication (GI)-tagged Onattukara sesame**.
- ❖ Onattukara sesame is **currently grown on around 600 hectares spread across 43 local bodies in three districts of Alappuzha, Kollam and Pathanamthitta in Kerala**.
- ❖ Compared to other places, **sesame grown in the region contains high levels of Vitamin E and antioxidants**.
- ❖ It **also contains oleic acid, linoleic acid, palmitoleic acid etc.** which **help maintain good health**.
- ❖ Traditional **ayurvedic doctors** in the region have used **Onattukara sesame oil for treating rheumatism and skin protection** since the **18th century**.

2.12 INTERNATIONAL TROPICAL TIMBER ORGANISATION

- ❖ The **59th session** of the **International Tropical Timber Council**, the **governing body of the International Tropical Timber Organisation (ITTO)**, was held recently in **Pattaya, Thailand**.
- ❖ The **International Tropical Timber Council** meets at least once a year to discuss a **wide-ranging agenda aimed at promoting sustainable tropical forest management and the trade of sustainably produced tropical timber**.
- ❖ The **60th Session** of the **ITTC will be held in Yokohama, Japan, in December 2024**.

ABOUT INTERNATIONAL TROPICAL TIMBER ORGANISATION (ITTO)

- ❖ ITTO is a **treaty-based inter-governmental organisation** headquartered in **Yokohama, Japan**.
- ❖ ITTO was **established by the International Tropical Timber Agreement of 1983 (ITTA, 1983)** to bring together **governments to jointly consider issues facing the tropical forest sector and related international trade, including the crucial importance of the tropical forest resource base**.
- ❖ At present, **ITTO operates under the ITTA, 2006**.
- ❖ ITTO is **focussed on promoting the sustainable management and conservation of tropical forests and the expansion and diversification of international trade in tropical timber from sustainably managed and legally harvested forests**.
- ❖ The organisation’s **75 members** include **37 “producer” countries and 38 “consumer” countries**.
- ❖ **India is a founder member of ITTO**.
 - ✓ **India belongs to the group of the producer member countries**.

- ✓ The **Ministry of environment, forest & climate change** is the nodal ministry for ITTO related matters in India.
- ❖ ITTO's membership represents about **90 per cent** of the global tropical timber trade and more than **80 per cent** of the world's tropical forests.

2.13 INVESTOR RISK REDUCTION ACCESS PLATFORM

- ❖ The **Investor Risk Reduction Access (IRRA)** is a platform that will act as a 'safety net' for investors in case of **technical glitches** faced by a trading member or a stock broker registered with SEBI.
- ❖ It will provide investors an opportunity to close open positions and cancel pending orders in case of **disruption at the stock brokers' end**.
- ❖ It is **not meant for taking fresh positions or orders**, but only to cancel the pending orders.
- ❖ IRRA has been jointly developed by all the stock exchanges – BSE, NSE, NCDEX, MCX and Metropolitan Stock Exchange of India (MSE) and was launched by Securities and Exchange Board of India (SEBI).
- ❖ However, IRRA is not available for algo trading and Institutional clients.
 - ✓ Securities available for trading and settlement on a Trade-for-Trade basis will not be available for square-off.

2.14 CREDIT GUARANTEE SCHEME FOR MICRO AND SMALL ENTERPRISES (CGTMSE)

- ❖ In a major boost to the **Micro, Small and Medium Enterprises (MSME)** sector, the **Credit Guarantee Scheme for Micro and Small Enterprises (CGTMSE)** has approved a credit guarantee of **Rs. 1 lakh crore** in just **7 months** of the current financial year 2023-24.

ABOUT CGTMSE

- ❖ CGTMSE has been playing a pivotal role in facilitating credit flow to MSMEs, especially those in the **informal sector**.
- ❖ It was launched in **2000** to make available collateral-free credit to the micro and small enterprise sector.
- ❖ **Both the existing and the new enterprises** are eligible to be covered under the scheme.
- ❖ The corpus of CGTMSE is contributed by the **Gol 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.
- ❖ The revamped version of the CGTMSE Scheme has been provided with an additional corpus support of **₹9,000 crore** in the Union Budget for FY 2023-24 to provide a guarantee for an additional **₹2 lakh crore** to MSEs.

ABOUT SIDBI

- ❖ A statutory body established in **1990**.
- ❖ It is the **Principal Financial Institution** engaged in the promotion, financing & development of the **Micro, Small and Medium Enterprises (MSMEs)** sector and the coordination of the functions of the various institutions engaged in similar activities.
- ❖ SIDBI helps MSMEs in acquiring the funds they require to grow, market, develop and commercialize their technologies and innovative products.
- ❖ It was made responsible for administering the **Small Industries Development Fund** and **National Equity Fund**.

2.15 LIST OF G-SIBS RELEASED BY FSB

- ❖ The **Financial Stability Board (FSB)** published the **2023 list of global systemically important banks (G-SIBs)** using end-2022 data and applying the assessment methodology designed by the **Basel Committee on Banking Supervision (BCBS)**.

- ❖ One bank (Bank of Communications (BoCom)) has been added to the list of G-SIBs that were identified in 2022, and two banks (Credit Suisse and UniCredit) have been removed.
- ❖ The overall number of G-SIBs therefore decreases from 30 to 29.
 - ✓ None of the Indian Banks is on the list.

ABOUT G-SIBS

- ❖ A G-SIB is bank whose systemic risk profile is deemed to be of such importance that the bank's failure would trigger a wider financial crisis and threaten the global economy.
- ❖ FSB member authorities apply the following requirements to G-SIBs-

SBI, ICICI Bank, and HDFC Bank are identified as Domestic Systemically Important Banks (D-SIBs) in India.

- ✓ **Higher capital buffer:** The G-SIBs are allocated to buckets corresponding to higher capital buffers that they are required to hold by national authorities in accordance with international standards.
- ✓ **Total Loss-Absorbing Capacity (TLAC):** G-SIBs are required to meet the TLAC standard, alongside the regulatory capital requirements set out in the Basel III framework.
- ✓ **Resolvability:** These requirements include group-wide resolution planning and regular resolvability assessments.
- ✓ **Higher supervisory expectations:** These include supervisory expectations for risk management functions, risk data aggregation capabilities, risk governance and internal controls.

ABOUT FSB

- ❖ It was established in 2009 after the G20 Summit in London as the successor to the Financial Stability Forum.
- ❖ The FSB Secretariat is located in Basel, Switzerland, and hosted by the Bank for International Settlements.
- ❖ The FSB coordinates at the international level the work of national financial authorities and international standard-setting bodies and develops and promotes the implementation of effective regulatory, supervisory, and other financial sector policies in the interest of financial stability.
- ❖ It brings together national authorities responsible for financial stability in 24 countries and jurisdictions, international financial institutions, sector-specific international groupings of regulators and supervisors, and committees of central bank experts.
- ❖ The FSB also conducts outreach with approximately 70 other jurisdictions through its six Regional Consultative Groups.

3. GEOGRAPHY

3.1 1KAWAH IJEN LAKE

- ❖ European Space Agency (ESA) has recently shared pictures of Kawah Ijen Lake.
- ❖ It is located in East Java, Indonesia.
- ❖ It has pH of less than 0.3
- ❖ It is a volcanic crater that is 'full of acid that also spits blue flames'.
- ❖ It is the largest and most acidic crater lake in the world.
- ❖ Geologists call it the 'The largest acid barrel on Earth', due to its high concentration of sulfuric and hydrochloric acids, as well as dissolved minerals which also give the lake its blue-greenish colour.
- ❖ It also emits flammable and hot sulfurous gases that ignite upon contact with Earth's oxygen-rich atmosphere.
- ❖ It is the source of the extremely acidic and metal-polluted river 'Banyupahit'.

3.2 AURORA

- ❖ The **Hanle and Merak observatories in Ladakh** spotted a **phenomenon uncommon in India** — an intense **red aurora**.
 - ✓ Auroras are **patterns of bright lights in the sky** that are **seen** when **particles ejected by the Sun interact with the magnetic field around the Earth**.
 - ✓ The phenomenon is **usually visible closer to the poles**.
- ❖ **Hanle is an ideal place to observe the phenomenon** as it is **India's only dark sky reserve** — an area **where special measures are taken to reduce artificial light pollution**.
 - ✓ It is **located 4500 metres above sea level**.
- ❖ **Indian Astronomical Observatory (IAO)**, operated by the **Indian Institute of Astrophysics (IIA), Bengaluru**, used an **All-sky Camera to capture this extraordinary event**.
- ❖ The red-coloured auroral activity, an **unusual spectacle** was **attributed to a Stable Auroral Red (SAR) event**, a **rare atmospheric phenomenon that paints the sky in vivid shades of red**, contrasting the **more common green and blue curtains of light typically** associated with auroras at higher latitudes.
 - ✓ The **SAR event was triggered by a geomagnetic storm**, a major disturbance of Earth's magnetosphere caused by a solar storm.

3.3 NEW ISLAND IN JAPAN

- ❖ Recently, a **new island emerged** near **Japan's Ogasawara island chain**.
 - ✓ The **Ogasawara island chain**, also known as the **Bonin Islands**, constitutes a **volcanic arc comprising over 30 islands and islets**, some of which **remain volcanically active**.
- ❖ An **unnamed undersea volcano** recently **erupted about half a mile off the southern coast of Iwo Jima**. Just 10 days later, there was **enough debris on the shallow seabed to allow a new island—formed of volcanic ash and splintered rocks—to poke 66 feet above the ocean's surface**.
- ❖ The island is **about 100 meters in diameter**, standing **20 meters above the sea less than a mile off Iwo Jima island**.
- ❖ The island took shape through **phreatomagmatic eruptions**.
- ❖ The term **"phreatomagmatic"** combines **"phreatic," relating to water**, and **"magmatic," referring to magma**.
- ❖ These eruptions are **actually triggered when magma reacts with seawater**, thereby **resulting in explosive releases of ash and steam**.

3.4 LAKE TITICACA

- ❖ The water levels in **Lake Titicaca** are **now reaching record lows**, worsened by the **El Nino weather phenomenon** that means **less rain in the area**, compounding a **long dry spell and rare high temperatures**.
- ❖ It is **South America's largest body of fresh water**.
- ❖ It is **situated between Peru (to the west) and Bolivia (to the east)**.
- ❖ Nestled amid the **Andes mountains**, it is **the highest navigable lake in the world**.
- ❖ Height- **12,500 feet above sea level**.
- ❖ Area- **spanning roughly 3,200 square miles**.
- ❖ **Average depth- 460 to 600 feet**, though the **maximum depth drops to 920 feet toward the Bolivian shore**.

3.5 E-PRIME LAYER

- ❖ A study by an international team of researchers has revealed the formation of **new enigmatic layer – E prime layer** – at the **outermost part of Earth's core is a result of "surface water penetrating deep into the planet,"** altering the **composition of the metallic liquid core's outermost region**.

- ✓ **Earth comprises four primary layers: an inner core at the planet's center, surrounded by the outer core, mantle, and crust.**
- ❖ This latest research suggests that **tectonic plates carrying surface water have transported it deep into the Earth over billions of years.**
- ❖ **Upon reaching the core-mantle boundary about 1,800 miles below the surface, this water initiates significant chemical changes, influencing the core's structure.**
- ❖ The reaction **leads to the formation of a hydrogen-rich, silicon-depleted layer at the outer core, resembling a film-like structure.**
- ❖ **Silica crystals generated by this process ascend and blend into the mantle, impacting the overall composition.**
- ❖ These **modifications in the liquid metallic layer could potentially result in reduced density and altered seismic characteristics.**

3.6 CYCLONE MIDHILI

- ❖ The **cyclonic storm named "Midhili" impacted the Northeast Bay of Bengal, near the coast of Bangladesh.**
- ❖ The designation '**Midhili**' has been assigned by the Maldives.

ABOUT CYCLONES

- ❖ Cyclones are **large-scale air masses that rotate around a strong center of low atmospheric pressure.**
- ❖ They are **characterized by inward spiraling winds that rotate counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.**
- ❖ **Favorable conditions-**
 - ✓ **Large sea surface with temperature higher than 27° C.**
 - ✓ **Presence of the Coriolis force.**
 - ✓ **Small variations in the vertical wind speed.**
 - ✓ **A pre-existing weak low- pressure area or low-level-cyclonic circulation.**
 - ✓ **Upper divergence above the sea level system.**

3.7 COSEISMIC IONOSPHERIC PERTURBATIONS (CIP)

- ❖ As per a new study, **Earthquake processes, even relatively smaller ones, have their reflection in the ionosphere, as they influence the amplitudes and periods of coseismic ionospheric perturbations (CIP) along with factors such as geomagnetism and line-of-sights geometry.**
- ❖ The finding can **help observing earthquake source processes from the space which may pave the way for deciphering earthquake precursors using space-based observations.**
- ❖ **Phenomenon-**
 - ✓ In general, the Earth crust uplift (**vertical crustal movements**) during any earthquake produces **compressional (i.e. pressure) waves in the overlying atmosphere.**
 - ✓ The **waves propagate upward, reach the ionosphere, causing disturbances in numbers of electrons along the line-of-sights connecting ground Global Navigation Satellite System (GNSS) receivers and satellites.**
 - ✓ These **disturbances are called as coseismic ionospheric perturbations (CIP).**

4. ART AND CULTURE

4.1 CREATIVE CITIES NETWORK

- ❖ UNESCO published the list of 55 new creative cities recently on World Cities Day (October 31st), in which Kozhikode has been given the tag of City of Literature, the first to hold the title in the country.
- ❖ Gwalior in Madhya Pradesh is the other creative city on the list, having bagged the City of Music tag.
- ❖ The UNESCO Creative Cities Network is a flagship city programme of UNESCO launched in 2004 to promote cooperation among cities which have recognized culture and creativity as strategic drivers of sustainable urban development.
- ❖ With the latest additions, there are 350 creative cities in the network, in more than 100 countries, representing seven creative fields; Crafts and Folk Art, Design, Film, Gastronomy, Literature, Media Arts, and Music.
- ❖ Other creative cities from India are-
 - ✓ Jaipur - Crafts and Folk Arts (2015).
 - ✓ Varanasi - Music (2015).
 - ✓ Chennai - Music (2017).
 - ✓ Mumbai - Film (2019).
 - ✓ Hyderabad - Gastronomy (2019).
 - ✓ Srinagar - Crafts and Folk Arts (2021).

4.2 KAMAKHYA TEMPLE

- ❖ Bhutan King recently visited famed Kamakhya Temple in Guwahati.

ABOUT KAMAKHYA TEMPLE

- ❖ It is situated on the Nilachal Hill in western part of Guwahati city in Assam.
- ❖ It is one of the oldest of the 51 Shakti Peethas in India.
- ❖ It is one of the most revered centres of Tantric practices.
- ❖ According to the legends, it was built by the demon king Narakasura but records are available only from 1565 when Koch king Naranarayana rebuilt the temple.
- ❖ Being the centre for Tantra worship this temple attracts thousands of tantra devotees in an annual festival known as the Ambubachi Mela.
 - ✓ Ambubachi Mela is held every year to commemorate the yearly menstruation of Goddess Kamakhya.
- ❖ Architecture
 - ✓ It had been modelled out of a combination of two different styles, namely, the traditional nagara or North Indian and saracenic or Mughal.
 - ✓ Thus, being an unusual combination which came into its existence on this famous sakti shrine of India, it has been named as the Nilachala Style of Architecture.

4.3 GEOGLYPH DISCOVERED IN TELANGANA

- ❖ A geoglyph in the form of a circle, said to be 3,000 years old, has been unearthed on the outskirts of Mudichu Thalapalli in the Medchal-Malkajgiri district of Telangana.
- ❖ It is a first-of-its-kind discovery in Telangana.
 - ✓ Etched on a low-lying granitoid hillock, the geoglyph spans 7.5 metres in diameter and has a perfect circular shape.
 - ✓ Surrounding the circle is a 30-centimetre-wide rim, and within the circle are two triangles.
- ❖ A prehistoric rock art expert has dated the geoglyph to the Iron Age, specifically around 1000 BCE.

- ❖ He suggested that **this circle might have served as a model for megalithic communities in planning their circular burial sites.**
- ❖ The **geoglyph** displays the **artistic skills and etching techniques of Telangana's Iron Age inhabitants.**
- ❖ Earlier, archaeologists had **discovered three prehistoric rock shelters** located **within a radius of 1 km from this site**, where **prehistoric rock art was found**, with the **images of bulls, deer, porcupine, and humans found on the rocks inside those rock shelters.**
 - ✓ The **rock art was found to have been from the Mesolithic and Megalithic periods (8500 BC- 1000 BC).**

Geoglyphs are a **form of rock art**, where a **design or motif is etched on the ground using stones, iron or some other tools used by prehistoric humans.**

In this case, archaeologists believe that **iron was used in making the geoglyph through a process called 'pecking.'**

4.4 YOGINI IDOLS TO COME BACK

- ❖ External Affairs Minister presided over a **repatriation ceremony in London for two 8th-century temple idols stolen from India and discovered in England recently.**
- ❖ The **Yogini Chamunda and Yogini Gomukhi idols, stolen from a temple in Lokhari in Uttar Pradesh between the late 1970s and the early 1980s, were recovered by the High Commission of India in London with support from India Pride Project, and Art Recovery International.**
 - ✓ **India Pride Project** is an organisation that **works on restoring India's lost artefacts.**
- ❖ **'Yogini'** refers to **female masters of the yogic arts with 64 divine Yoginis worshipped as goddesses at Yogini temples such as Lokhari.**
- ❖ The **term is slightly ambivalent as it applies both to the goddesses and adept worshippers, who were believed to be able to take on some of the goddesses' powers by performing secret rituals before the statues.**
- ❖ **These are associated with the Tantrik mode of worship.**
- ❖ The **major surviving temples of the 64 Yoginis, commonly termed as the 'Chausath Yogini' shrines are two in Orissa and two in Madhya Pradesh in India.**
- ❖ **These include Chausath Yogini temple (Odisha), Khajuraho temple complex (M.P) etc.**
- ❖ The **Lokhari temple is believed to have 20 Yogini statues, depicted as beautiful women with the heads of animals. In the 1970s, the temple was targeted by a group of robbers who smuggled goods into Europe via Switzerland.**

4.5 COSEISMIC IONOSPHERIC PERTURBATIONS (CIP)

- ❖ The President and Prime Minister led political leaders in wishing people for **Chhath Puja.**
- ❖ While **Chhath has been celebrated in Bihar, parts of eastern Uttar Pradesh and Nepal** for centuries, over the past decade or so, it has become a lot more visible across the country.

ABOUT THE FESTIVAL

- ❖ Chhath Puja is a **four-day elaborate celebration in honour of the Sun.**
- ❖ Chhath is a **festival that epitomises religiosity in Bihar.**
- ❖ While **only some people observe the fast, the entire community gets involved in making the festival a success — cleaning riverbanks and the roads leading up to those banks, gathering all the little things needed for the rituals, and preparing the kuas, the prasad for the festival which is now synonymous with Bihari cuisine.**
- ❖ **The festivities include**
 - ✓ The first day of the festival is called **naha kha**, where those **observing it take a meal (khana) only after a ceremonial bath** in a river, a pond, or the sea (nahana).
 - ✓ The **second day is called kharna**, on which the one observing the fast takes **only one meal in the evening, of roti and kheer (rice pudding).**

- ✓ After the roti-kheer meal begins a **36-hour fast, during which devotees don't even drink water.**
- ✓ On the **third day**, devotees go to the banks of a water body whose banks are decorated with diyas, rangoli, and sugarcane stalks.
- ✓ All the **offerings to the God** — seasonal fruits like sweet potato, water chestnuts, pomelo, banana — are placed in soops (cane baskets) along with diyas. As the Sun sets, the person fasting raises the soop to it as an offering (arghya).
 - This is called the **Sanjh ka Arghya, or the evening offering.**
- ❖ The **next day**, the same ritual is conducted at dawn, for the rising Sun, called the **Bhor ka Arghya.**

4.6 INTERNATIONAL FILM FESTIVAL OF INDIA

- ❖ The **54th International Film Festival of India (IFFI)** is taking place in Goa currently.
- ❖ It will showcase **over 270 films** from **105 countries** across four venues.

ABOUT IFFI

- ❖ It was **established in 1952** and stands among the **prominent film festivals in Asia.**
- ❖ It aims at **providing common platform for cinemas of world to project the excellence of the film art.**
- ❖ **It is held annually in Goa since 2004.**
- ❖ It is **jointly organized** by **National Film Development Corporation (NFDC), Ministry of Information and Broadcasting and Entertainment Society of Goa (ESG).**

4.7 KOLKALI DANCE

- ❖ Kolkali is **one of the most popular folk dance of Kerala's Malabar region.**
- ❖ Kolkali means '**dance with sticks**'.
- ❖ Both **men and women participate** in the dance.
- ❖ The **dancers move in a circle striking small sticks** and **keeping rhythm with special steps according to the music.**
 - ✓ The circle **expands and contracts** as the dance proceeds.
 - ✓ The **accompanying music gradually rises in pitch** and the dance reaches its climax.
- ❖ **Musical instruments** used include **Chenda, Elathalam, Mathalam and Chengala.**
- ❖ Usually it is **presented once in a year after paddy harvest** during the month of **April.**
- ❖ **Farmers and all villagers celebrate** the festival **together without any caste and creed.**

4.8 KAMBALA

- ❖ **Bengaluru** is hosting its **first-ever 3-day Kambala event** at **Palace Grounds**, marked by the **meticulous setup of large galleries, a sacred puja, and a record-breaking 155-meter track, promising a unique spectacle.**
- ❖ **Kambala** is a **traditional buffalo race in paddy fields filled with slush and mud** which generally takes place in **coastal Karnataka.**
- ❖ Kambala is usually held **after the southwest monsoon, once the paddy is harvested.**
- ❖ **Races are held in Dakshina Kannada and Udupi districts** every weekend starting **November** and the **last race of the season** is in **April.**
- ❖ During the race, **two teams of buffaloes, along with their jockeys, race towards the finish line on parallel race tracks.**
- ❖ The **race goes on all day** and winners qualify for subsequent rounds.
- ❖ **Prizes are also given out to whoever splashes water the highest.**
- ❖ The **traditional sport** was recently in the **limelight** after the release of the **blockbuster movie Kantara.**

4.9 MEERA BAI

- ❖ The Prime Minister participated in Sant Mirabai Janmotsav, a program to celebrate the 525th birth anniversary of Sant Mirabai in Mathura, Uttar Pradesh.
- ❖ A commemorative stamp and coin were also released in honour of Sant Mira Bai.

ABOUT SANT MEERA BAI

- ❖ Meera Bai was a 16th century Hindu mystic Bhakti poet and she was an ardent devotee of Lord Krishna.
- ❖ Meerabai was the princess who was born on 1498 to Rajput King Ratan Singh, Jodhpur, Rajasthan.
 - ✓ She was the only child.
- ❖ Meera got married in 1516 to Bhoj Raj, the son of Rana Sanga and prince of Mewar.
 - ✓ He was injured in 1518 in a conflict with the rulers of the Delhi Sultanate and due to this, he died in 1521.
- ❖ She expressed her deep love for Lord Krishna through soul-stirring poems (bhajans and padavali), which conveyed her spiritual yearning and intense longing for union with the divine.
- ❖ She wrote hundreds of songs and initiated a mode of singing the songs, a raga.
 - ✓ About 200-400 songs are accepted by scholars as being written by Mirabai; another 800-1000 have been attributed to her.
- ❖ She was the first to introduce Giridhara Gopala cult of Brindavan.
- ❖ She was a disciple of Saint Ravidas.

ABOUT BHAKTI MOVEMENT

- ❖ The Bhakti saints advocated for attaining God through devotion (bhakti) rather than adhering to rules, regulations, or societal structures.
- ❖ The movement originated in South India in the 7th and 10th CE, mostly in the poems of Alvars and Nayanars.
- ❖ It swept over east and north India from the 15th century onwards, reached its peak between the 15th and 17th century CE.
- ❖ The two schools of Bhakti saints were- Nirguna and Saguna School.
 - ✓ According to Nirguna school of thinking, God had no shape and lacked any characteristics.
 - ✓ The Saguna School, on the other hand, held that God manifests himself through incarnations like Rama and Krishna and has a specific shape, personality, and beneficial qualities.
- ❖ Other famous Bhakti saints include- Guru Nanak, Tulsidas, Kabirdas, Ravidas and Surdas

4.10 CHEBROLU

- ❖ A quiet town, Chebrolu, in Guntur district of Andhra Pradesh, located near Vijayawada, is referred to by many as a land of temples.
- ❖ A general belief runs in the town that there are more than 100 small and big temples.
- ❖ Not all of the temples here have a 'sikharam' (tower).
- ❖ Most of them are one-roomed temples found in every corner of the town.
- ❖ Eastern Chalukya, Velanati Choda, Kakatiya, Pota Rajulu, and Paristchedi dynasties have all ruled this place.
- ❖ Of all, a cluster of four ancient temples is the highlight. All of them were built between the 9th and 12th century A.D.
- ❖ They are-
 - ✓ Chaturmukha Brahmeswara temple has a Sivaling and the four faces of Lord Brahma attached to it. The temple sits in the middle of a pond.
 - ✓ The Bhimeswara temple, built by the Eastern Chalukyan King Chalukya Bhima during the 9th century A.D., has two floors, a staircase and a huge Sivaling.
 - ✓ Nageswara Swamy, again a Siva temple, belonging to the 11th century A.D.
 - ✓ The fourth temple is Adikesava temple, built in the Cholan style of architecture. The temple, dedicated to Lord Vishnu, has pillars outside that have standing lion

5. SCIENCE AND TECHNOLOGY

5.1 GRAPHENE AEROGEL

- ❖ Researchers at the **Indian Institute of Technology Madras and Tel Aviv University** have developed an **aerogel adsorbent** that can remove trace pollutants from wastewater.
- ❖ **Aerogels** comprise mostly of air and can be used to remove contaminants.
- ❖ The **highly porous, low-density materials with adjustable chemistry** are referred to as **solid air or frozen smoke** and can be easily fabricated.
- ❖ A method called '**supercritical fluid deposition**' was employed to prepare these modified aerogels and studied their effectiveness.
- ❖ The **Graphene-doped modified silica aerogels (GO-SA)** were found to exhibit efficiency in purifying water, attracting and removing contaminants due to **graphene's unique molecular structure**.
- ❖ Under real-life conditions mimicked in their experiments, the **material removed over 85% of pollutants in controlled settings and more than 76% in continuous flow conditions**
- ❖ **Aerogels** could be **customised to target specific contaminants** by modifying their surface chemistry, making them versatile.
- ❖ They can be **generated and reused multiple times**, reducing waste and operational costs, making them a **sustainable solution for water purification**.

5.2 HEMOGLOBIN

- ❖ Textbooks have said for decades that **haemoglobin is found in the red blood cells (RBCs)**, that it **makes blood red, carries oxygen, and is essential for our survival**.
- ❖ In a study published in Nature, **scientists from China have reported that chondrocytes – cells that make cartilage, the connecting tissue between bones – also make haemoglobin and seem to depend on it for their survival**.

ABOUT HEMOGLOBIN

- ❖ It is an **iron-containing protein** found in the **red blood cells** that **carries oxygen from the lungs to the body's tissues and returns carbon dioxide from the tissues back to the lungs**.
- ❖ It is **made up of four protein molecules (globulin chains) that are connected together**.
- ❖ **Haemoglobin** forms an **unstable reversible bond with oxygen**.
 - ✓ In **oxygenated state**, it is called **oxyhemoglobin** (bright red) and in **reduced state** it is called **deoxyhemoglobin** (purple-blue).
- ❖ It is **present in RBCs of vertebrates**.
- ❖ **All vertebrates except cold-water ice fish transport oxygen via haemoglobin**.
- ❖ Haemoglobin **develops in cells in bone marrow** that become RBCs.
- ❖ Haemoglobin levels vary from person to person. **Men usually have higher levels than women**.
- ❖ A **low haemoglobin level** is referred to as **anemia or low red blood count**.
 - ✓ Reasons include- **loss of blood, nutritional deficiency, bone marrow problems, suppression by red blood cell synthesis by chemotherapy drugs, kidney failure, and abnormal hemoglobin structure (sickle cell anemia or thalassemia)**.

5.3 CARBON NANOFLORETS

- ❖ **Carbon nanoflorets** made by **IIT Bombay** researchers can **convert incident sunlight to heat with 87% efficiency**.

ABOUT CARBON NANOFLORETS

- ❖ These are like tiny marigold flowers made only of carbon, which are called as the material carbon nanoflorets.
- ❖ Researchers heated a special form of silicon dust called DFNS (for dendritic fibrous nanosilica) in a furnace. Once heated, acetylene gas was introduced into the chamber.
- ❖ The white powder turned black – a sign that carbon had been deposited on the DFNS.
- ❖ The black powder was collected and treated it with a strong chemical that dissolved the DFNS away, leaving carbon particles behind.
- ❖ The structure of the silicon particles – 50-1,200 nanometers in size—resembled spikes arranged around a sphere.
- ❖ The carbon nanoflorets' high efficiency comes from three properties
 - ✓ The nanoflorets absorb three frequencies in sunlight – infrared, visible light, and ultraviolet whereas other common materials like photovoltaic materials used in solar panels, absorb only visible and ultraviolet light.
 - More than half of the energy in sunlight arrives to the earth as infrared radiation.
 - So the nanoflorets can absorb much more energy from the sun.
 - ✓ The other two properties responsible for the material's high light-heat conversion efficiency are a result of its shape.
 - As light falls on the material, the carbon cones ensure that very little is reflected back. Instead, most light is reflected internally.
 - The carbon nanoflorets don't lose heat to its environment, however, thanks to long-range disorder- parts of the structure at some distance from each other possess different physical properties.
 - As a result, heat waves in the material aren't carried over long distances, reducing the amount of heat dissipated away.

5.4 BLETCHLEY DECLARATION

- ❖ Twenty-eight countries and EU have agreed to work together under 'Bletchley Declaration' to prevent "catastrophic harm, either deliberate or unintentional" which may arise from artificially intelligent computer models and engines.
 - ✓ Bletchley Park in Buckinghamshire near London was once the top-secret base of the codebreakers who cracked the German 'Enigma Code' that hastened the end of World War II.
- ❖ The declaration incorporates an acknowledgment of the substantial risks from potential intentional misuse or unintended issues of control of frontier AI – especially cybersecurity, biotechnology, and disinformation risks, according to the UK government, the summit host.
 - ✓ "Frontier AI" is defined as highly capable foundation generative AI models that could possess dangerous capabilities that can pose severe risks to public safety.
- ❖ The declaration set out a two-pronged agenda focused on identifying risks of shared concern and building scientific understanding of them, while also developing cross-country policies to mitigate them.
- ❖ Members include Australia, Brazil, Canada, Chile, China, France, Germany, India, Indonesia, Ireland, Israel, Italy, Japan, Kenya, Saudi, Arabia, Netherlands, Nigeria, The Philippines, the Republic of Korea, Rwanda, Singapore, Spain, Switzerland, Turkey, Ukraine, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, the United States of America, and the European Union.

5.5 E-DNA

- ❖ A new method developed by the researchers at the Laboratory for the Conservation of Endangered Species (LaCONES) can help in detection of biodiversity in a more efficient manner.
- ❖ They followed a molecular approach to extract and read the genetic information encoded in free-floating environmental DNA (eDNA).
 - ✓ LaCONES is a CSIR-Centre for Cellular and Molecular Biology (CCMB) laboratory headquartered in Hyderabad.

- ✓ eDNA is DNA shed by all organisms into their surroundings through natural processes during their lifetime or after death.
- ❖ The new non-invasive method can assess the total biodiversity of any ecosystem by sequencing the DNA fragments found in the environmental samples such as water, soil or air.
- ❖ This method can detect all kinds of organisms, including viruses, bacteria, archaea, and eukaryotes such as fungi, plants, insects, birds, fish and other animals from just a few litres of water sample without any direct capture or counting of species.
- ❖ The new method is cheaper, faster, and highly scalable to large freshwater and marine ecosystems which can help in monitoring and conserving the rich biodiversity of our country.

5.6 FREEMARTINS

- ❖ In animal husbandry, cattle that are born exhibiting characteristics of both sexes are called freemartins.
- ❖ Freemartins are sterile female cattle that result from the twinning of a male and a female within the same uterus.
- ❖ This phenomenon occurs in approximately 90% of such twin pregnancies in cattle.
- ❖ The key reason is the exchange of blood between the male and the female foetuses during gestation.
- ❖ Genetically, freemartinism is attributed to the sharing of cells carrying the Y chromosome from the male twin with the female twin.
- ❖ This chromosome triggers the development of male reproductive organs in the male foetus, while the female foetus, affected by the presence of male hormones, experiences incomplete development of its reproductive system.
- ❖ The end result is that the freemartin has an underdeveloped or non-functional reproductive tract.
- ❖ In agricultural settings, because freemartins can't reproduce, farmers often identify them through physical and/or behavioural traits to cull them from the breeding herd to improve reproductive efficiency.

5.7 FRACTALS

- ❖ Physicists are using fractal geometry to study quantum systems, providing a unique perspective on the uncertainties of quantum physics.

ABOUT FRACTALS

- ❖ A fractal is a never-ending pattern.
- ❖ Fractals are infinitely complex patterns that are self-similar across different scales.
- ❖ These are created by repeating a simple process over and over in an ongoing feedback loop.
- ❖ They are capable of describing many irregularly shaped objects or spatially nonuniform phenomena in nature, such as coastlines and mountain ranges.
- ❖ Applications-
 - ✓ Overcome measurement limitations.
 - ✓ Fractals are applied in data compression, antenna design, and studying patterns in galaxies.

5.8 NITROGEN-9

- ❖ A recent study has found a particularly unusual isotope, nitrogen-9.
- ❖ It was created by smashing beams of oxygen isotopes into beryllium atoms in the U.S. National Superconducting Cyclotron Laboratory.
- ❖ Atoms of the nitrogen-9 isotope are characterised by seven protons and two neutrons – which is an unusually high proton-to-neutron ratio.
- ❖ This disparity has a critical effect on the isotope's stability, influencing its decay processes as well as overall behaviour.

Isotopes are atoms of a given element that vary only in the number of neutrons.

5.9 TANTALUM FOUND IN SATLUJ

- ❖ A team of researchers from the Indian Institute of Technology (IIT), Ropar has found the presence of tantalum, a rare metal, in the Sutlej river sand in Punjab.

ABOUT TANTALUM

- ❖ Tantalum is a **rare metal with the atomic number 73** — the number of protons found in one atom of the element.
- ❖ It is **grey, heavy, very hard, and one of the most corrosion-resistant metals in use today.**
- ❖ It possesses **high corrosion resistance** because **when exposed to air, it forms an oxide layer that is extremely difficult to remove, even when it interacts with strong and hot acid environments.**
- ❖ It is almost **completely immune to chemical attack at temperatures below 150°C**, and is **attacked only by hydrofluoric acid, acidic solutions containing the fluoride ion, and free sulphur trioxide.**
- ❖ **When pure**, tantalum is **ductile** (meaning it can be stretched, pulled, or drawn into a thin wire or thread without breaking).
- ❖ Tantalum also **has an extremely high melting point**, exceeded only by tungsten and rhenium.
- ❖ **Discovery**
 - ✓ Tantalum was **discovered by Anders Gustaf Ekenberg, a Swedish chemist, in 1802** in minerals obtained from **Ytterby, Sweden.**
 - ✓ The rare metal has been named after a **Greek mythological figure Tantalus, the rich but wicked king of a town above Mount Sipylus in Anatolia.**
- ❖ **Applications**
 - ✓ It is **most prominently used in the electronic sector.**
 - ✓ As tantalum has a high melting point, it is **frequently used as a substitute for platinum**, which is more expensive.
 - ✓ The rare metal is also **used to make components for chemical plants, nuclear power plants, aeroplanes and missiles.**
 - ✓ Tantalum **does not react with bodily fluids** and is **used to make surgical equipment and implants**, like artificial joints.

5.10 LANGLANDS PROGRAM

- ❖ This program was **set in motion in 1967** by Dr. Robert Langlands at Princeton University.
- ❖ Langlands Program consists of **“very complicated theoretical abstractions, which can be difficult even for specialist mathematicians to grasp”.**
- ❖ At the heart of the Program is an **attempt to find connections between two far-flung areas of mathematics: number theory and harmonic analysis.**
 - ✓ **Number theory** is the **arithmetic study of numbers and the relationships between them.**
 - A famous example of such a relationship is the **Pythagoras theorem: $a^2 + b^2 = c^2$.**
 - ✓ **Harmonic analysis** is interested in the **study of periodic phenomena.**
 - Unlike number theorists, who deal with discrete arithmetics (like integers), **harmonic analysts deal with mathematical objects more continuous in nature (like waves).**
- ❖ In 2018, Dr. Langlands was **awarded the Abel Prize, one of the highest honours for mathematicians**, for **“his visionary program connecting representation theory to number theory”.**

5.11 DIGITAL TWIN

- ❖ In a first-of-its-kind initiative, the **Survey of India (SoI)**, historically the custodian of India’s maps, has **signed an agreement with a Mumbai-based private company, Genesys International**, to prepare **three-dimensional maps of several cities and towns.**
- ❖ Called **‘Digital Twins,’** these maps are **three-dimensional representations of cities and when coupled with high-resolution images, can be used in a variety of planning applications.**

ABOUT DIGITAL TWINS

- ❖ A **digital twin** is a **virtual representation of a physical object or system** that is constantly updated with **real-time data** from sensors, IoT devices, and other sources.
- ❖ This **data** allows digital twins to simulate the behavior of their physical counterparts, enabling users to **monitor performance, predict potential problems, and optimize operations.**
- ❖ Digital twins are not just static models; they are **dynamic and evolve** as the physical object or system changes.
- ❖ They can be used to represent a wide variety of things, from individual assets and machines to entire **factories, cities, and even people.**
- ❖ Key aspects of how digital twins are used in the context of IoT-
 - ✓ **Real-time Monitoring and Control of IoT devices and systems**
 - ✓ **Predictive Maintenance**
 - ✓ Digital twins **enable simulation and modeling of IoT devices or systems under different conditions.**
 - ✓ **Remote Diagnostics and Troubleshooting.**
 - ✓ In **consumer IoT applications, digital twins can be used to create personalized user experiences.**
 - ✓ **Data Analytics and Insights**

ABOUT SURVEY OF INDIA

- ❖ Sol is the **National Mapping Agency of country** under Department of Science & Technology.
- ❖ The **Sol** is a **historical repository of maps and the arbiter of national and State boundaries**
- ❖ It also **maintains an all-India network of transmitters and receivers called CORS (Continuously Operating Reference Stations)** that are **interconnected via satellites and provide accurate estimates of position.**

5.12 DEEPFAKES

- ❖ Union Information Technology Minister stated that the **government will form regulations to control the spread of deepfakes on social media platforms**, terming them a **“new threat to democracy”**.
- ❖ The **plan** will have **four key pillars: detection of deepfakes, their prevention by removing or reducing their virality, strengthening reporting mechanisms, and spreading awareness about the technology.**
- ❖ The **government will also work with other countries and geographies to ensure that there is a global collaborative effort to combat such content.**

ABOUT DEEPFAKES

- ❖ A **deepfake** is a **video of a person in which the face or body has been digitally altered so that he or she appears to be someone else.**
- ❖ This is **typically used to spread false information.**
- ❖ These are **synthetic media that use AI to manipulate or generate visual and audio content.**
- ❖ Deepfakes are a **part of Deep Synthesis, which uses technologies, including deep learning and augmented reality, to generate text, images, audio and video to create virtual scenes.**
- ❖ It can create people who do not exist and it can fake real people saying and doing things they did not say or do.

5.13 GREEN LEAF VOLATILES

- ❖ Recently, for the first time, **scientists were able to visualise plants sensing compounds** released by other plants in danger.
- ❖ These are called **green leaf volatiles (GLVs).**
- ❖ **Mechanical damage or herbivory by fungal or bacterial infection** can trigger GLVs release.
- ❖ Plants have **two major defence mechanisms, involving a chain of molecular reactions.**
- ❖ The **reactions are triggered when a plant is damaged and GLVs are released as by-products.**

- ❖ By mounting a **defence response**, plants can make themselves less palatable or even indigestible to the insect attackers.
- ❖ The **molecular cascade** is mediated by calcium, a common mediator of chemical and electrical signals found throughout biology.
- ❖ **Green leaf volatiles (GLVs)** are short chain (six carbon atoms) group of alcohols, acetates, and aldehydes, that can **enhance or interrupt the behavioral responses** of insects to their pheromones depending on the **species and the context** in which they are encountered.
- ❖ **Further research can pave the way to protect crops without pesticides.**

6. DEFENCE

6.1 PARCHAND HELICOPTER

- ❖ The **Army's Light Combat Helicopter (LCH) Prachand** successfully carried out **inaugural firing of 70 mm rockets and 20 mm turret guns** both by **day and night**.
- ❖ Both the Army and the Air Force have inducted the indigenous LCH in small numbers.
- ❖ A **bigger contract for 156 indigenous LCH, 90 for Army and 66 for the Air Force**, estimated to cost ₹45,000 crore is expected to be taken up by the **Defence Acquisition Council (DAC)** soon.

ABOUT PARCHAND

- ❖ The Prachand is **India's first indigenous multi-role combat helicopter**, developed by **Hindustan Aeronautics Limited (HAL)**.
- ❖ **Prachand is the world's only attack helicopter that can land and take off at an altitude of 5,000 metres (16,400 ft).**
- ❖ A **5.8-tonne class combat helicopter**, the Prachand can fly at a **maximum speed of 288 kmph** and has a **combat radius of 500 km**, which can go up to a **service ceiling of 21,000 feet**.
- ❖ The helicopter is **fitted with Shakti Engine**, which is **co-developed by HAL and France's Safran**.
- ❖ The helicopter received **operational clearance in 2017**.
- ❖ The LCH is **armed with 20 mm nose gun and 70 mm rockets** along with **helicopter-launched anti-tank guided missile** and a **new air-to-air missile** different from the 'Mistral-2' from MBDA on the IAF LCH.
- ❖ The helicopter can carry out activities such as **Combat Search and Rescue (CSAR), Destruction of Enemy Air Defence (DEAD), operations against slow-moving aircraft and Remotely Piloted Aircraft (RPAs), high-altitude bunker busting operations, counter-insurgency operations in the jungle and urban environments** and provide support to ground forces.

6.2 S400

- ❖ The **Indian Air Force** has deployed its **three S-400 air defense missile squadrons** along borders with **China and Pakistan**.
- ❖ Indian and Russian officials are set to meet to discuss the **final delivery schedule for the remaining two squadrons**.
- ❖ India had signed an **over ₹ 35,000 crore contract with the Russian side in 2018-19** for five squadrons of the **S-400 missiles**.

ABOUT S-400

- ❖ The **S-400 Triumf (or SA-21 Growler)** is a **mobile, surface-to-air missile system**.
- ❖ It is **one of the world's most advanced air defence systems** that can **simultaneously track numerous incoming objects**.
- ❖ Developed by - **Almaz Central Design Bureau of Russia**.
- ❖ The **first S-400 was deployed in combat in August 2007**.

- ❖ It has **command and control centre, automatic tracking and targeting systems, launchers and support vehicles.**
- ❖ It is **equipped with four different missiles that can engage enemy aircraft, ballistic missiles, and AWACS planes at 400 km, 250 km, the medium-range 120 km and the short-range 40 km.**
- ❖ Radars fitted into this system can **detect incoming objects from a distance of 400 kilometres and an altitude of 30 kilometres.**
- ❖ The system can **simultaneously engage 36 targets.**

6.3 FINANCIAL ACTION TASK FORCE (FATF)

- ❖ A report titled '**Crowdfunding for Terrorism Financing**' was recently released by **Financial Action Task Force (FATF).**
- ❖ The FATF report notes **four main ways** in which crowdfunding platforms can be abused for terrorist financing purposes —
 - ✓ **abuse of humanitarian, charitable or non-profit causes;**
 - ✓ **use of dedicated crowd-funding platforms or websites;**
 - ✓ **use of social media platforms and messaging apps; and**
 - ✓ **interaction of crowd-funding with virtual assets.**

ABOUT FATF

- ❖ The FATF is the **global money laundering and terrorist financing watchdog.**
- ❖ The FATF was **established in July 1989 by a G-7 Summit in Paris, initially to examine and develop measures to combat money laundering.**
- ❖ After the **9/11 attacks, the FATF in October 2001 expanded its mandate to incorporate efforts to combat terrorist financing.**
- ❖ It also works on the **mechanisms to stop funding for weapons of mass destruction.**
- ❖ Headquarters- **Paris, France.**
- ❖ The **decision-making body of FATF is the FATF Plenary which meets thrice in a year.**
- ❖ As of 2023 **the FATF currently comprises 38 member jurisdictions and two regional organisations- European Commission and Gulf Cooperation Council.**
 - ✓ **India has been a member of the FATF since 2010.**
- ❖ **Countries which repeatedly fail to adhere to FATF Standards can be placed on its Grey list or Black list.**

6.4 FIRST COMPANY TO GET 100% DEFENCE FDI

- ❖ **Sweden's Saab** has reportedly **become the first foreign company that has bagged 100% FDI in India's defence projects.**
- ❖ It will **set up a new facility in the country (likely in Haryana) that will manufacture shoulder-fired rockets.**
- ❖ This will be the first time Saab will **manufacture Carl-Gustaf M4 outside Sweden.**
- ❖ The **shoulder-fired rockets are used by Indian armed forces extensively, and countries like the US, and European nations also use them to take down fortified enemy positions, armour, and personnel.**
- ❖ Currently, **India allows only 74% FDI in the defence sector under the automatic route.**
- ❖ Beyond that, **clearance can be obtained on a case-by-case basis.**
- ❖ However, the **clearance rules were relaxed in 2015, still, no foreign firm was able to get permission for 100% FDI in defence.**
- ❖ The Government has **liberalised and allowed FDI under automatic route up to 74% and up to 100% through Government route wherever it is likely to result in access to modern technology.**

6.5 OPERATION ALL CLEAR

- ❖ **Bhutan King's** recalled **Operation All Clear**, during his recent visit to India.
- ❖ '**Operation All Clear**' was launched by the **Royal Bhutan Army** on **December 15, 2003**, and dealt a **crippling blow** to the **United Liberation Front of Asom (ULFA)**, the **National Democratic Front of Bodoland** and the **Kamatapur Liberation Organization (KLO)**, which had set up camps in Bhutanese territory.
- ❖ The **6000-member Royal Bhutan Army** launched **simultaneous attacks** on the camps of all three outfits with **logistical and medical assistance** from the **Indian Army**, which also sealed the **Indo-Bhutan border** to prevent militants from escaping into India.
- ❖ Among the top leaders captured included **ULFA ideologue and founding member Bhimkanta Buragohain**, ULFA publicity secretary **Mithinga Daimary**, KLO crack squad chief **Tom Adhikary**, KLO second in command **Milton Burman** and **NDFB publicity chief B. Erakdao**.

6.6 RUSSIA TEST FIRES BULAVA ICBM

- ❖ Russia recently successfully **test-launched an intercontinental ballistic missile capable of carrying nuclear warheads** from one of its submarines.
- ❖ The new **nuclear-powered strategic missile submarine cruiser Emperor Alexander the Third** has successfully launched the **Bulava sea-based intercontinental ballistic missile**.
- ❖ The **Emperor Alexander the Third** is one of **Russia's new Borei-class nuclear submarines** that carry **16 Bulava missiles** each and are more manoeuvrable and quieter than previous models.
- ❖ The **12-metre-long (39 ft) Bulava missile** was designed to be the backbone of **Moscow's nuclear triad** and has a range of more than **8,000km (5,000 miles)**.
- ❖ The missile is designed to carry as many as **six nuclear warheads**.

6.7 PARLAY MISSILE

- ❖ India recently, **successfully test-fired surface-to-surface short-range ballistic missile (SRBM) 'Pralay'** from the **Abdul Kalam Island** off the **Odisha coast**.
- ❖ The missile has been **developed by the Defence Research and Development Organisation (DRDO)** in view of the country's **defence requirements along its borders with neighbouring China and Pakistan**.
- ❖ '**Pralay**' is a **350-500 km short-range, surface-to-surface missile** with a **payload capacity of 500-1,000 kg**. The **solid-fuel, battlefield missile** is based on the **Prithvi Defence Vehicle**.
- ❖ '**Pralay**' missile can be compared with **China's 'Dong Feng 12'** and **Russia's 'Iskander'**.

6.8 BONGOSAGAR 23

- ❖ The **4th edition of the Bilateral Exercise** between the **Indian Navy and Bangladesh Navy**, **BONGOSAGAR-23**, and the **5th edition of Coordinated Patrol (CORPAT)** by the two navies were held at **Visakhapatnam**.
- ❖ **Ships and aircraft from both navies** undertook joint patrolling along the **International Maritime Boundary Line** and maritime exercises to enhance interoperability.
- ❖ Indian Navy Ships **Kuthar, Kiltan** and **Maritime Patrol Aircraft (MPA) Dornier** participated in the exercise.
- ❖ The **ships undertook communication drills, surface gun-shoots, tactical maneuvers and other exercises**.
- ❖ **CORPAT-23** also included the **maiden Humanitarian Assistance and Disaster Relief** drills held **between the two navies**.

6.9 NIRBHAY MISSILE

- ❖ The Indian armed forces will be **inducting the long-range attack cruise missile Nirbhay** into their inventory to strike targets at ranges over **1,000 Km**.

ABOUT NIRBHAY MISSILE

- ❖ Nirbhay is **India's first indigenous cruise missile**.

- ❖ With its **cylindrical fuselage**, it is similar in appearance to the US Tomahawk and Russian Club SS-N-27 missiles.
- ❖ The **Defence Research and Development Organisation (DRDO)** describes Nirbhay as a **long-range subsonic cruise missile** capable of deep penetration into adversary territory to strike high-value targets with precision.
- ❖ Nirbhay is **presently launched from a mobile-articulated launcher**.
- ❖ The missile is **being adopted for launch from sea and air platforms**.
- ❖ The Nirbhay measures **6 m in length, 0.5 m in diameter and weighs 1,500-1,600 kg at launch**.
- ❖ It has a **range of 800-1,000 km while carrying a 450 kg payload**.
- ❖ It equips a **land-based mobile launcher and carries high-explosives or submunitions**, although a **small nuclear warhead with a 12 KT yield** is also possible.

6.10 EXERCISE MITRA SHAKTI 2023

- ❖ The **ninth edition of a joint military exercise** between India and Sri Lanka, Exercise Mitra Shakti commenced in Pune.
- ❖ India is **being represented by a contingent of 120 personnel** and officers from the **Maratha Light Infantry Regiment** and **15 air warriors and officers from the Indian Air Force (IAF)**.
- ❖ The Sri Lankan side is being represented by personnel from Sri Lankan Army's 53 Infantry Division and five personnel from Sri Lankan Air Force.
- ❖ **'Mitra Shakti'**, which means **power of friendship**, is **conducted alternately in India and Sri Lanka**.
- ❖ Both sides will practice tactical actions such as **raid, search and destroy missions, heliborne operations**, etc. In addition, **Army Martial Arts Routine (AMAR), combat reflex shooting and yoga** will also form part of the exercise curriculum.
- ❖ **It will also involve employment of drones and counter unmanned aerial systems, besides helicopters.**

6.11 INDO-PACIFIC REGIONAL DIALOGUE

- ❖ The **annual apex-level international conference of the Indian Navy – the Indo-Pacific Regional Dialogue (IPRD)** – was recently held in **New Delhi**.
- ❖ The IPRD is the **principal manifestation of the Navy's international engagement** at the **strategic-level, addressing 'holistic' maritime security issues** across the **Indo-Pacific**.
- ❖ The **National Maritime Foundation (NMF)** is the **Indian Navy's knowledge partner and chief organiser of each edition of the IPRD**.
- ❖ The overarching **theme of IPRD-2023** is **"Geopolitical Impacts upon Indo-Pacific Maritime Trade and Connectivity"**.

6.12 EXERCISE VAJRA PRAHAR

- ❖ A **joint exercise of the special forces of India and the United States** commenced in **Meghalaya's Umroi Cantonment**.
- ❖ Titled **'Vajra Prahar 2023'**, it is the **14th such exercise** aimed at sharing the best practices and experiences in areas such as **joint mission planning and operational tactics**.
- ❖ The **first edition of the joint exercise was conducted in 2010**.
- ❖ The **U.S. contingent** is represented by personnel from the **1st Special Forces Group** while the **Indian Army contingent** is led by the **Special Forces personnel from the Eastern Command**.
- ❖ The exercises include **combat free-fall insertion of troops from stand-off distances, water-borne insertion of troops, precision engagement of targets at long ranges, combat air-controlling of fixed-wing and rotary-wing aircraft, and airborne insertion and sustenance of troops**.

6.13 EXERCISE SURYA KIRAN

- ❖ The **17th edition** of the **Joint Military Exercise SURYA KIRAN** is set to **strengthen the longstanding ties between India and Nepal** in Pithoragarh, Uttarakhand.
- ❖ It is an **annual event** and conducted **alternatively in the two countries**.
- ❖ The **Indian Army contingent** comprising of **354 personnel** is being **led by a Battalion** from the **KUMAON Regiment**.
- ❖ The **Nepal Army contingent** is represented by **Tara Dal Battalion**.
- ❖ Aim of the exercise is to **enhance interoperability in jungle warfare, counter terrorism operations in mountainous terrain** and **Humanitarian Assistance and Disaster Relief** under **United Nations Charter on peace keeping operations**.

6.14 NATIONAL CADET CORPS

- ❖ The **National Cadet Corps (NCC)** celebrated its **75th anniversary** recently.
- ❖ The **NCC in India** was formed in **1948** with the **objective** to make up for a **shortage of personnel** in the **Army**.
- ❖ The **first Prime Minister of India, Jawaharlal Nehru** presided over the function of raising the first **NCC Unit at Delhi** on the **last Sunday of November 1948**.
- ❖ Serving as the **youth wing of the Indian Armed Forces**, it operates from its headquarters in **New Delhi**. Open to **school and college students** voluntarily, the **NCC functions as a Tri-Services Organisation, encompassing the Army, Navy and Air Force**.
- ❖ Cadets **undergo fundamental military training**, including **small arms handling and drill exercises**.
- ❖ The **motto** of the NCC, **Unity and Discipline**, encapsulates the **values of duty, loyalty, dedication, and self-sacrifice**.
- ❖ It stands as the **largest youth organisation in the country**, with a **mission to build character, and leadership qualities and foster national integration**.

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7. SPACE

7.1 INTEGRAL FIELD ULTRAVIOLET SPECTROSCOPE EXPERIMENT (INFUSE)

- ❖ NASA launched a new sounding rocket to study a stellar event in the Cygnus Loop, which is a supernova remnant that took place 20,000 years ago.
- ❖ The sounding rocket mission, named the Integral Field Ultraviolet Spectroscope Experiment (INFUSE) was launched from the White Sands Missile Range in New Mexico.
- ❖ The INFUSE mission will study the Cygnus Loop and try to understand the life cycle of stars.
- ❖ The INFUSE mission is expected to collect information about the remnant for a few minutes from a height of 150 miles (240 km).
- ❖ Specifically, the instrument will gather light streaming from the Cygnus Loop in far-ultraviolet wavelengths.
- ❖ INFUSE will observe how the supernova dumps energy into the Milky Way by catching light given off just as the blast wave crashes into pockets of cold gas floating around the galaxy

ABOUT CYGNUS LOOP

- ❖ The constellation Cygnus (Latin for “swan”) used to appear every few months each year in the northern hemisphere’s night sky.
- ❖ Just above this constellation exists the favourite spot of professional scientists and backyard astronomers alike- the Cygnus Loop or the Veil Nebula.
- ❖ The Cygnus Loop is the remnant of a star that was once 20 times the size of our Sun.
- ❖ Some 20,000 years ago, that star collapsed under its own gravity and erupted into a supernova.
- ❖ After this supernova, some matters of the explosion remain suspended in the universe, which is known to astronomers as the Cygnus Loop.
- ❖ Even from 2,600 light-years away, astronomers estimate the flash of light would have been bright enough to see from Earth during the day.

ABOUT SUPERNOVA

- ❖ A supernova is a powerful and luminous explosion of a star.
- ❖ A supernova occurs during the last evolutionary stages of a massive star.
- ❖ These are part of a great life cycle.
- ❖ They spray heavy metals forged in a star’s core into the clouds of surrounding dust and gas.
- ❖ They are the source of all chemical elements in our universe heavier than iron, including those that make up our own bodies.

7.2 LUCY MISSION

- ❖ NASA’s Lucy mission while flying past a small main-belt asteroid called Dinkinesh, found an even smaller “moon” orbiting it.
- ❖ The two form a binary asteroid pair.

ABOUT THE MISSION

- ❖ Lucy was launched in 2021.
- ❖ Lucy is the first space mission to explore a diverse population of small bodies known as the Jupiter Trojan asteroids.
 - ✓ These are remnants of our early solar system and are trapped on stable orbits associated with – but not close to – the giant planet Jupiter.
 - ✓ Trojan asteroids orbit in two “swarms” that lead and follow Jupiter in its orbit around the Sun.
 - ✓ These are thought to be comparable in number to the objects in the main asteroid belt between the orbits of Mars and Jupiter.

- ❖ Over its **12-year mission**, Lucy will explore a **record-breaking number of asteroids**: it will fly by two (plus a newly discovered satellite) in the belt of asteroids that circle the Sun between the orbits of Mars and Jupiter, and **then eight Trojans**, which includes **five asteroid targets and the satellites of three of those**.
- ❖ Lucy also **will fly by Earth three times to get a push from its gravity**, making it the **first spacecraft to return to the vicinity of Earth from the outer solar system**.

FACT

- ❖ The **Lucy mission is named after the fossilized skeleton of an early hominin** (pre-human ancestor) that was found in **Ethiopia in 1974** and named “Lucy”.

7.3 ADITYA L1

- ❖ The **Indian Space Research Organisation’s (ISRO) Aditya L1 solar probe mission** has captured its **first high-energy solar flare in X-ray**.
- ❖ The **High Energy L1 Orbiting X-ray Spectrometer (HEL1OS)** on board **Aditya-L1** has recorded the **impulsive phase of solar flares**.
- ❖ The recorded data is **consistent with the X-ray light curves provided by NOAA’s GOES**.
- ❖ The High Energy L1 Orbiting X-ray Spectrometer is the **hard X-ray spectrometer on the mission**.
 - ✓ It operates in the **wide X-ray energy band between 10 and 150 keV**.
 - ✓ It **helps study solar flare activities on the Sun**.
- ❖ **Other payloads on board the Aditya L1 include-**
 - ✓ **Solar Ultraviolet Imaging Telescope (SUIT), Aditya Solar Wind Particle Experiment (ASPEX), Plasma Analyser Package for Aditya (PAPA), SoLEXS-Solar Low Energy X-ray Spectrometer (SoLEXS) and Magnetometer**.

The GOES satellite is the “**Geostationary Operational Environmental Satellite**,” which is **operated by the United States National Oceanic and Atmospheric Administration (NOAA)**.

It **supports weather forecasting, severe storm tracking and meteorology research**.

ABOUT SOLAR FLARES

- ❖ A **solar flare is an intense burst of radiation** coming from the **release of magnetic energy associated with sunspots**.
- ❖ They **tend to originate from regions of solar surface that contain sunspots** — darker, cooler portions of solar surface where **magnetic fields are particularly strong**.
- ❖ Flares are **our solar system’s largest explosive events**.
- ❖ They are **seen as bright areas on the sun**, and they can last from **minutes to hours**.
- ❖ **Studying solar flares and other space weather phenomena is important** because they can affect life here on Earth.
 - ✓ They can **affect power systems, satellite communication systems and radio communications**.
 - ✓ During **worst-case scenarios, they can cause blackouts that affect large parts of the Earth for hours**.

7.4 EUCLID MISSION

- ❖ The **European Space Agency’s (ESA) Euclid mission**, released its **first five science images**.
- ❖ They include **views of large clusters with thousands of distant galaxies, close-ups of two nearby galaxies, a nebula, and a gravitationally bound group of stars called a globular cluster**.

ABOUT EUCLID

- ❖ Euclid was **designed to investigate how dark matter and dark energy made the cosmos what it is**.
 - ✓ It was **launched in July 2023**.
- ❖ About **95% of the universe seems to be made of these units that we have no idea about as these dark entities cannot be directly detected**.

- ❖ Over the **next 6 years**, Euclid will **observe the shapes, distance and motions of billions of galaxies out to 10 billion light-years**.
- ❖ Euclid's view of the cosmos special is **because of its ability to create a remarkably sharp visible and infrared image across a huge part of the sky in just one sitting**.
- ❖ It **will orbit Lagrange point 2 (L2)**.
- ❖ In the process, it **will create the largest cosmic 3D map ever made**.

7.5 OLDEST BLACK HOLE DETECTED

- ❖ Scientists have **discovered a black hole that is 10 times larger than the one in our Milky Way galaxy and also the oldest one**.
 - ✓ Black holes are **very dense objects with such intense gravity that even light cannot escape, if it strays too close**.
 - ✓ They are **formed when massive stars die or there is a direct collapse of gases**.
- ❖ The **new black hole is a record breaker: the most distant yet observed in X-rays**.
- ❖ These new findings **confirmed the claims that there were super-massive black holes existed at the dawn of the universe**.
- ❖ **NASA's James Webb Telescope and Chandra X-Ray Observatory teamed up over the past year to make the observations**.
- ❖ They used a technique called **gravitational lensing to magnify the region of space where this galaxy, UHZ1, and its black hole are located**.
- ❖ The **age of this black hole can be estimated to be around 13.2 billion years, considering the universe's age to be 13.7 billion years**.
 - ✓ Thus it dates back to **470 million years after the Big Bang**.

Gravitational Lensing occurs when massive objects distort and magnify light from objects behind them, acting as cosmic telescopes and making distant galaxies appear brighter.

7.6 SOFIA DETECTS OXYGEN ON VENUS

- ❖ Scientists have **now detected atomic oxygen in a thin layer sandwiched between two other layers of the Venusian atmosphere**.
- ❖ They noted that this **atomic oxygen, which consists of a single oxygen atom, differs from molecular oxygen, which consists of two oxygen atoms and is breathable**.
- ❖ The oxygen is **produced on the planet's day side by ultraviolet radiation from the sun that breaks down atmospheric carbon dioxide and carbon monoxide into oxygen atoms and other chemicals. Some of the oxygen is then transported by winds to the Venusian night side**.
- ❖ They used an instrument **aboard the SOFIA airborne observatory**.

ABOUT VENUS

- ❖ Also called **Earth's twin**.
- ❖ Venus, with a **diameter of about 7,500 miles (12,000 km), is slightly smaller than Earth**.
- ❖ Unlike **Earth, where oxygen makes up about 21% of the atmosphere, Venus has a thick and noxious atmosphere dominated by carbon dioxide (96.5%), with smaller amounts of nitrogen and trace gases**.
- ❖ It has **no moons and rotates clockwise (east to west)**.
- ❖ It is **the hottest planet due to "runaway greenhouse effect"**.

ABOUT SOFIA

- ❖ It is a **Boeing 747SP aircraft modified to carry an infrared telescope**.
- ❖ It is a **joint project between NASA and the German Aerospace Center**.

7.7 FAST DETECTS PULSARS

- ❖ Recently, a team from the **National Astronomical Observatories of Chinese Academy of Sciences discovered 76 intermittent pulsars** in the **Galactic Plane Pulsar Snapshot Survey**, including the **faintest known pulsars to date**, using China's **Five-hundred-meter Aperture Spherical Radio Telescope (FAST)**.

ABOUT PULSARS

- ❖ Pulsars are **highly magnetized, rotating neutron stars that emit electromagnetic radiation along their magnetic axes.**
- ❖ **First discovered, in 1967, by Jocelyn Bell Burnell and Antony Hewish.**
- ❖ **'Period' of the pulsar refers to time when pulsar appears to 'switch off' at points when the light is facing away from Earth.**

ABOUT FAST

- ❖ The **Five-hundred-meter Aperture Spherical radio Telescope (FAST)** is a **Chinese mega science project that began operations in 2016.**
- ❖ It is the **world's largest single-dish radio telescope, located in Chinese province Guizhou.**
- ❖ It has a **diameter of 500 meters, comprising 4,450 triangular panels.**

7.8 NISAR SATELLITE

- ❖ Scientists and engineers involved in the **NASA-ISRO Synthetic Aperture Radar (NISAR) mission** have completed **key tests including the thermal vacuum testing ahead of its launch** which is scheduled to take place in the **first quarter of 2024.**

ABOUT NISAR

- ❖ NISAR is a **Low Earth Orbit observatory jointly developed by NASA and ISRO** which is **expected to be launched from the Satish Dhawan Space Centre in Sriharikota onboard ISRO's GSLV Mark-II launch vehicle.**
- ❖ The **\$1.5-billion NISAR's mission life is for three years.**
- ❖ The **satellite will survey all of earth's land and ice-covered surfaces every 12 days** and this starts after a **90 day satellite commissioning period.**
- ❖ NISAR carries **L and S dual-band Synthetic Aperture Radar (SAR)**, which operates with the **Sweep SAR technique to achieve large swaths with high-resolution data.**
 - ✓ The **SAR payloads mounted on Integrated Radar Instrument Structure (IRIS) and the spacecraft bus are together called an observatory.**
- ❖ **Collaboration**
 - ✓ **NASA's JPL is providing the mission's L-band SAR. NASA is also providing the radar reflector antenna, the deployable boom, a high-rate communication subsystem for science data, GPS receivers, a solid-state recorder, and payload data subsystem.**
 - ✓ **ISRO's U R Rao Satellite Centre in Bengaluru is providing the spacecraft bus, the S-band SAR electronics, the launch vehicle, and associated launch services and satellite mission operations.**
- ❖ **NISAR data will help researchers monitor a wide range of changes in unprecedented detail** which includes **spotting warning signs of imminent volcanic eruptions, helping monitor the effects of groundwater use** such as land subsidence, **tracking the melt rate of ice sheets tied to sea level rise** and **observing shifts in the distribution of vegetation around the earth.**

7.9 GAMMA RAY BURSTS

- ❖ **About two billion years ago in a galaxy far beyond our Milky Way, a massive star exploded (called supernova) that unleashed a huge burst of gamma rays, which pack the most energy of any wave in the electromagnetic spectrum.**
- ❖ Those **waves traversed the cosmos and finally reached Earth last year.**
- ❖ Scientists previously determined that this was the **strongest such burst ever detected.**

- ❖ This gamma-ray burst caused a significant disturbance in Earth's ionosphere.
 - ✓ It is a **layer of the planet's upper atmosphere** that contains electrically charged gases called **plasma**.
 - ✓ The **ionosphere** is situated about **30-600 miles (50-950 km)** above Earth's surface, stretching to the very edge of space.
 - ✓ It **helps form the boundary between the vacuum of space and the lower atmosphere inhabited by people and Earth's other denizens**.
 - ✓ The **ionosphere**, which helps protect life on Earth by absorbing harmful ultraviolet rays from the sun, is **highly sensitive to changing magnetic and electrical conditions in space, usually connected to solar activity**.
 - ✓ It also **expands and contracts in response to solar radiation**.
- ❖ The **gamma rays** from the **burst impacted Earth's atmosphere for a span of about 13 minutes in October, 2022**.
- ❖ They were **detected by the European Space Agency's Integral (International Gamma-Ray Astrophysics Laboratory) space observatory and various satellites orbiting close to Earth**.

7.10 EELS- EXOBIOLOGY EXTANT LIFE SURVEYOR

- ❖ **NASA is currently conducting trials on an innovative robot, EELS, with a snake-like design, capable of autonomous exploration in untapped regions on both the Moon and Mars.**
- ❖ Utilizing **lidar and four sets of stereo cameras**, the **EELS head visually perceives and interprets the world, generating a 3D map of its surroundings**.
- ❖ **Propulsion, traction, and grip on icy surfaces and in loose materials such as snow and sand are achieved through the use of independently actuated counter-rotating screws.**
- ❖ The **EELS architecture has been tailored to accommodate the challenges posed by crevasse envelopes, ensuring adaptability throughout its journey from the surface to the ocean.**
- ❖ **Each segment houses both actuation and propulsion mechanisms, along with the necessary power and communication electronics to operate them.**

7.11 WASP- 107B

- ❖ **NASA's James Webb space telescope has revealed a planet called Wasp-107b where specks of sand fall as rain.**
- ❖ The planet, **Wasp-107b**, lies **200 light years away in the Virgo constellation**.
- ❖ It is **very large but very light**, earning it the nickname the **"candy floss" planet**.
- ❖ It features **silicate sand clouds and rain, scorching temperatures, raging winds and the distinct burnt-matches scent of sulphur dioxide**.
- ❖ **The planet was discovered in 2017.**
- ❖ **Wasp-107b is similar in mass to Neptune but almost the size of Jupiter, and its vast, diffuse nature allows the James Webb telescope to peer deep into its atmosphere.**
- ❖ The latest observations reveal **evidence of water vapour and sulphur dioxide, which would give the atmosphere a smell of burnt matches.**
- ❖ It is also the **first time the chemical composition of clouds on another planet has been identified – in this case, silicate sand.**
- ❖ The **planet's atmosphere would feature something akin to Earth's water cycle, but instead with sand cycling between solid and gaseous states.**

A central aim of the James Webb space telescope is to analyse the atmospheres of distant planets and search for bio-signature gases that could indicate the presence of life.

7.12 DEEP SPACE OPTICAL COMMUNICATIONS (DSOC)

- ❖ NASA's **Deep Space Optical Communications (DSOC)** experiment, aboard the **Psyche** spacecraft, has accomplished a **groundbreaking "first light" moment**.
- ❖ The **DSOC** experiment, which has the **potential to revolutionize spacecraft communication**, successfully **transmitted data via laser to and from beyond the moon for the first time**, marking a significant milestone in deep space communication.
- ❖ **DSOC system** that consists of a **flight laser transceiver, a ground laser transmitter, and a ground laser receiver**.
- ❖ DSOC's primary goal is to **demonstrate data transmission rates 10 to 100 times greater than current state-of-the-art radio frequency systems** used by spacecraft.
 - ✓ This advancement holds promise for **transmitting scientific information, high-definition imagery, and streaming video, significantly contributing to future human missions to Mars.**
- ❖ The achievement was **realized as the near-infrared laser, encoded with test data, traversed nearly 16 million kilometers, a distance approximately 40 times farther than the Earth-Moon separation, to reach the Hale Telescope at Caltech's Palomar Observatory in San Diego County.**

Deep space starts farther away from Moon's orbit and includes the solar system and beyond.

ABOUT PSYCHE MISSION

- ❖ NASA had launched a **spacecraft called 'Psyche'** on a **six-year mission to study a unique metal-rich asteroid also named 'Psyche.'**
- ❖ It **orbits the Sun between Mars and Jupiter.**
- ❖ The **primary goal** of the Psyche mission is to **explore the iron core**, a previously unexplored aspect of planet formation.
- ❖ **Asteroid Psyche is unique** as it appears to be the **exposed nickel-iron core of an early planet, one of the building blocks of our solar system.**
 - ✓ **For the first time, the mission will examine a celestial body primarily composed of metal rather than rock and ice.**
 - ✓ Through this it aims to gain insights into **the internal structure of terrestrial planets, including Earth.**

7.13 INTERNATIONAL SPACE STATION

- ❖ **November 20th, 2023** marked the **25th anniversary** of the **launch of the International Space Station (ISS).**
- ❖ **It is the largest man-made object in the solar system.**
- ❖ **Zarya**, the first module, launched on- **November 20th, 1998** from **Kazakhstan.**
 - ✓ **Zarya supplied fuel storage and battery power, and served as a docking zone for other space vehicles arriving at the ISS.**
- ❖ The **ISS has stood as a testament to the power of international cooperation** and has **played a pivotal role in advancing our understanding of space, microgravity, and fostering groundbreaking scientific research.**
- ❖ It is a **partnership between European countries (represented by ESA), United States (NASA), Japan (JAXA), Canada (CSA) and Russia (Roscosmos).**
- ❖ The **ISS orbits Earth every 90 minutes** at a **speed of 8 kilometers (5 miles) per second.**
 - ✓ Thus it **travels through 16 sunrises and sunsets every 24 hours.**
- ❖ It revolves at an **altitude of a mere 430 kilometers (267 miles).**
- ❖ The **ISS pressurised interior of 16 modules** has a **habitable space of 13,696 cubic feet (388 cubic metres), equivalent to a six-bedroom home.**
- ❖ It is **supported by a 310-foot-long (94-metre) truss, a massive iron backbone holding solar panels, batteries, and radiators.**
- ❖ **According to current plans, the ISS will be abandoned and deorbited after 2030.**

7.14 ATMOSPHERIC WAVES EXPERIMENT (AWE)

- ❖ **National Aeronautics and Space Administration (NASA)** is set to launch the Atmospheric Waves Experiment (AWE) to study one of the important drivers of Space weather – the Earth’s weather.

ABOUT ATMOSPHERIC WAVES EXPERIMENT (AWE)

- ❖ AWE is a **first-of-its-kind NASA experimental attempt** aimed at studying the interactions between **terrestrial and Space weather**.
- ❖ Planned **under NASA’s Heliophysics Explorers Program**, the **\$42 million mission** will study the links **between how waves** in the **lower layers of the atmosphere** impact the upper atmosphere, and thus, **Space weather**.
- ❖ AWE will be **launched and mounted on the exterior of the Earth-orbiting International Space Station (ISS)**.
- ❖ From the vantage point, it **will look down at the Earth and record the colourful light bands**, commonly known as **airglow**.

ABOUT ATMOSPHERIC GRAVITY WAVES

- ❖ Just like there is weather on the Earth, the **environment around the Earth and the other planets remains constantly under the influence of the Sun and its behaviours** – solar flares and emissions, along with the **kinds of prevailing matter in the Space surroundings**.
- ❖ In the atmosphere, there are a **wide variety of waves, travelling both horizontally and vertically**. **Atmospheric Gravity Waves (AGW)** are one such kind of **vertical wave**.
- ❖ They are **mostly generated when there is an extreme weather event or a sudden disturbance leading to a vertical displacement of stable air**.
- ❖ Natural phenomena like **thunderstorms, hurricanes, tornadoes, regional orography and others** have the **potential to send out a variety of periodic waves, including AGWs, in the lower levels of the atmosphere**.
- ❖ A **stable atmosphere plays an important role in the generation of gravity waves**, that is, when the atmosphere is stable, the **temperature difference between the rising air and the atmosphere produces a force that pushes this air to its original position**.
- ❖ The **air will continuously rise and sink, thus creating a wave-like pattern**.
- ❖ **AGW is a wave that moves through a stable layer of the atmosphere, wherein the upward-moving region is the most favourable for the formation of cloud patterns or streaks**.
- ❖ **AGWs continue all the way to Space, where they contribute to the Space weather**.

7.15 JUICE MISSION

- ❖ **Jupiter Icy Moons Explorer (JUICE) probe** will use **double gravity assist, for the first time ever, from Earth and Moon** to propel itself towards Jupiter.
- ❖ It was **launched to study the planet as well as its three icy and potentially ocean-bearing moons** – **Ganymede, Callisto and Europa**.
- ❖ **JUICE is among the heaviest interplanetary spacecraft ever launched with a total weight of around 6000 kg**.
- ❖ **European Space Agency’s (ESA) successfully launched its JUICE spacecraft from its spaceport in Kourou, French Guiana, in April 2023**.
- ❖ **JUICE aims to make detailed observations of the giant gas planet and is equipped with remote sensing, geophysical and in situ instruments**.
- ❖ **It is planned to reach Jupiter in 2031**.
- ❖ **Only two other spacecraft have ever examined Jupiter-**
 - ✓ the **Galileo probe, which orbited the gas giant between 1995 and 2003, and**
 - ✓ **Juno, which has been circling the planet since 2016.**

ABOUT GRAVITY ASSIST

- ❖ **Gravity assist is a technique by which a spacecraft, with the help of the gravitational field of a planet, gets a speed boost**.
- ❖ However, it is tricky to do so, **to execute a gravity assist, the spacecraft needs to pass through the planet’s gravitational field at a carefully calibrated exact point in order to get a “slingshot effect.”**

- ❖ JUICE would have to arrive at the Earth-Moon system at precisely the correct time, and speed and be travelling in the correct direction.

7.16 JAMES WEBB SPACE TELESCOPE

- ❖ NASA has unveiled a **spectacular new image of the Milky Way** taken by the **James Webb Space Telescope**, showing ever greater detail of a region close to the nucleus of our home galaxy — replete with **needle-like "unexplained structures"**.
- ❖ JWST was able to take a detailed snapshot of Sagittarius C.
 - ✓ Sagittarius C is a central region of the Milky Way where stars are born
 - ✓ It is **about 300 light years** away from Sagittarius A* , the gargantuan black hole that makes up the central hub of our galaxy.
- ❖ The **image contains an estimated 500,000 twinkly stars** plus a cluster of protostars emerging from dense dark clouds of dust and gas.
 - ✓ **Protostars are stars in the early stages of formation that are still gathering mass.**
 - ✓ In the image, a cluster of protostars is visible, emitting outflows that illuminate the surrounding infrared-dark cloud.

ABOUT JAMES WEBB SPACE TELESCOPE

- ❖ JWST is the **largest, most powerful infrared space telescope ever built.**
- ❖ It is an international collaboration between **NASA, the European Space Agency (ESA) and the Canadian Space Agency.**
- ❖ It is **placed at Lagrange point 2**, approximately 1.5 million km beyond Earth's orbit around the Sun.
 - ✓ **Lagrange Points are positions in space where the gravitational forces of a two-body system (like the Sun and the Earth) produce enhanced regions of attraction and repulsion.**
- ❖ Its **primary mirror is approximately 6.5 metres in diameter.**
- ❖ It was **launched in late 2021**, with its first images being released in 2022.
- ❖ The telescope was launched with the **goal of peering back at the earliest periods of the universe, searching for exoplanets, examining early galaxies, and also charting how stars are formed.**

7.17 ASTROSAT

- ❖ In an astronomical feat, **India's first multi-wavelength space telescope, AstroSat, has successfully detected its 600th Gamma-ray Burst (GRB), an event named GRB 231122B.**

ABOUT ASTROSAT

- ❖ The **Indian Space Research Organisation (ISRO) launched AstroSat in September 2015.**
- ❖ It is the **first dedicated Indian astronomy mission aimed at studying celestial sources in X-ray, optical and UV spectral bands simultaneously.**
- ❖ The **payloads cover the energy bands of Ultraviolet (Near and Far), limited optical and X-ray regime (0.3 keV to 100keV).**
- ❖ AstroSat with a **lift-off mass of 1515 kg** was launched into a **650 km near-equatorial orbit inclined at an angle of 6 deg to the equator** by PSLV-C30 from Satish Dhawan Space Centre, Sriharikota.
- ❖ The **minimum useful life of the AstroSat mission is expected to be 5 years.**
- ❖ After **injection into Orbit**, the **two solar panels of AstroSat were automatically deployed in quick succession.**
- ❖ The **spacecraft control centre at Mission Operations Complex (MOX) of ISRO Telemetry, Tracking and Command Network (ISTRAC), Bengaluru manages the satellite during its entire mission life.**
- ❖ The **science data gathered by five payloads of AstroSat are telemetered to the ground station at MOX.**
- ❖ **Five payloads-**
 - ✓ **Ultra Violet Imaging Telescope (UVIT) consists of two identical telescopes of aperture 380 mm.**

- ✓ **Large Area X-ray Proportional Counter (LAXPC)**, developed by TIFR has **three identical gas detectors**. LAXPC has a total effective area of **8000 cm²**.
- ✓ **Cadmium–Zinc–Telluride Imager (CZTI)**, developed by TIFR works in **20–100 keV**.
- ✓ **Soft X-ray Telescope (SXT)**, developed by TIFR, uses **X-ray reflecting mirrors and an X-ray CCD** for imaging and spectral studies in **0.3–8 keV**.
- ✓ **Scanning Sky Monitor (SSM)** developed by ISRO is an **all sky monitor** for detecting and monitoring transient sources.

ABOUT GAMMA-RAY BURSTS

- ❖ **Gamma-ray bursts** are the **universe's most powerful explosions**, often associated with the creation of **black holes**.
- ❖ These **bursts emit immense amounts of energy** in a short span, ranging from **milliseconds to several minutes**, and are considered among the **brightest events in the cosmos**.
- ❖ Understanding these bursts is crucial for astronomers as **they provide insights into the most extreme environments and the fundamental physics that govern the universe**.

7.18 AMATERASU

- ❖ Scientists **have detected one of the most powerful cosmic rays ever slamming into Earth** but they **have no idea what caused it or where it came from**.
- ❖ The **extremely high-energy particle** has been named **Amaterasu** after the **Japanese Sun goddess**, and it seemingly arrived from a void in space where nothing is known to exist.
- ❖ The Amaterasu particle **has an energy exceeding 240 exa-electron volts (EeV)**.
- ❖ That is **millions of times more powerful than the particles produced by the Large Hadron Collider**, which is the **most powerful accelerator ever built**.
- ❖ It is **second only to the “Oh-My-God” particle**, another **high-energy cosmic ray detected in 1991**.
 - ✓ That came in at **320 EeV**.

8. ENVIRONMENT

8.1 ARALAM WILDLIFE SANCTUARY

- ❖ Suspected Maoists reportedly opened fire at Forest department watchers at the **Aralam Wildlife Sanctuary** in Kannur in Kerala recently.

ABOUT ARALAM WILDLIFE SANCTUARY

- ❖ It is **spread over a 55 sq. km area of forests** on the **Western Ghats in Kannur district**.
- ❖ It is the **northernmost wildlife sanctuary of Kerala**.
- ❖ It was **established in 1984**.
- ❖ The **great Katti Betta**, is the **tallest peak in the area, which is 1145m high**.
- ❖ **The river Cheenkani flows through this wildlife sanctuary**.
- ❖ The entire area is **covered in tropical and semi-evergreen forests**.
- ❖ Fauna- **elephants, gaur, sambar, spotted deer, barking deer, Nilgiri Langur, Hanuman Langur and the Malabar Giant Squirrel**.
- ❖ It is **also famous for the vast amount of butterfly species found here**.
- ❖ Most of these are **endemic to the Western Ghats**.
- ❖ Aralam village itself **houses the famous Central State Farm**, a government of India initiative built in 1971.
 - ✓ This is one of the **main production centres of hybrid coconut seeds** in the country.

8.2 CRAB PLOVER BIRD

- ❖ Crab-plover might soon be called a resident species of the Indian subcontinent as their unique breeding sites have been recorded at Great Vedaranyam Swamp near Point Calimere, Tamil Nadu.
- ❖ The presence of five burrow nests of the crab-loving shore bird recorded at an islet near Siruthalaikkadu of Great Vedaranyam Swamp in August gained significance as the species was initially believed to only breed in the islands of the African east coast, the Persian Gulf, and the southern coasts of the Arabian Peninsula from June to August.
 - ✓ Great Vedaranyam Swamp is abundant with mudskippers and crabs, the favourite prey species of crab-plovers.

ABOUT CRAB-PLOVER

- ❖ Scientific name-Dromas ardeola
- ❖ It is considered a winter visitor to Pakistan, peninsular India, the Andaman and Nicobar Islands, Lakshadweep, northern Sri Lanka, and the Maldives, and a vagrant to Bangladesh.
- ❖ It is the only shore bird that lays eggs in self-excavated burrows on sandbanks.
- ❖ The bird lays white eggs and chicks remain inside the burrows until the fledging stage.
- ❖ Parents take care of the young ones for five to six months.
- ❖ IUCN red list – Least concerned
- ❖ It is one of the species to which the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) applies.

8.3 BLUE FLAG BEACHES

- ❖ The Tamil Nadu government has decided to commence works on identifying beaches across the State's coastline to vie for Blue Flag status, which could get their names enlisted among tourist hotspots and attract more travellers.
- ❖ At present, Kovalam Beach, is the only site in the State and one of the 12 places in the country, to claim Blue Flag status.
- ❖ Other 11 include-
 - ✓ Golden Beach – Odisha
 - ✓ Shivrajpur Beach – Gujarat
 - ✓ Kappad Beach – Kerala
 - ✓ Ghoghla Beach – Diu
 - ✓ Radhanagar Beach – Andaman and Nicobar
 - ✓ Kasarkod Beach – Karnataka
 - ✓ Padubidri Beach – Karnataka
 - ✓ Rushikonda Beach – Andhra Pradesh
 - ✓ Eden Beach – Puducherry
 - ✓ Minicoy Thundi Beach – Lakshwadeep
 - ✓ Kadmat Beach – Lakshadweep

ABOUT BLUE FLAG CERTIFICATION

- ❖ The Foundation for Environment Education in Denmark accords the Blue Flag certification.
- ❖ The Blue Flag Programme was initially initiated in France in 1985, aiming to recognize environmentally responsible beaches.
- ❖ It has been implemented outside Europe since 2001.
- ❖ It is aimed at promoting sustainable development in freshwater and marine sectors.
- ❖ It encourages local authorities and beach operators to achieve high standards in the four categories - water quality, environmental management, environmental education and safety.

8.4 RAJAJI TIGER RESERVE

- ❖ The Uttarakhand government has decided to establish Rajaji Tiger Reserve Conservation Foundation to accelerate the ecological, economic, social and cultural development of the landscapes in and around the reserve.

ABOUT RAJAJI NATIONAL PARK/TIGER RESERVE

- ❖ Rajaji National Park is an Indian national park and tiger reserve spread over three districts of Uttarakhand- Haridwar, Dehradun and Pauri Garhwal.
- ❖ It is named after the famous freedom fighter Rajgopalachari popularly known as "Rajaji".
- ❖ It is situated along the hills of Shivalik ranges and in transition zone between temperate western Himalaya and central Himalaya.
- ❖ Rajaji National Park was established in the 1983 after amalgamating three sanctuaries in the Uttarakhand i.e. Rajaji, Motichur and Chila.
- ❖ It was declared a Tiger Reserve in 2015 as the 48th tiger reserve of the country.
- ❖ The Ganga and Song rivers flow through this.
- ❖ **Vegetation-** forest types range from semi-evergreen to deciduous and from mixed broad-leaved to Terai grassland and has been classified as Indus-Ganges Monsoon Forest type.
- ❖ **Flora** includes species like Rohini, Palash, Shisham, Sal, Sandan, Khair, Arjun, Baans, Semul, Chamaror etc.
- ❖ **Fauna** includes Tiger, Asian Elephants Leopard, Jungle cat, Himalayan Black Bear, Sloth Bear, Striped Hyena, Goral, Sambar, Wild Pig, Spotted Deer, Barking Deer etc.
 - ✓ Large number of butterflies and small birds are also observed.

8.5 DHOLES

- ❖ A pair of elusive wild dogs, often referred to as Dholes, have made a rare appearance in Debrigarh Wildlife Sanctuary in Odisha's Bargarh district.
- ❖ Wild dogs are rarely sighted in Odisha's forests.

ABOUT DHOLES OR ASIAN WILD DOGS

- ❖ Scientific name -*Cuon alpinus*
- ❖ It is a wild carnivorous animal, member of the family Canidae and the class Mammalia.
- ❖ **Distribution-**
 - ✓ They are found throughout Eastern and Southeastern Asia and have been reported as far north as Siberia, as far south as some Malaysian islands.
 - ✓ In India, they are found in three clusters i.e. the Western and Eastern Ghats, central Indian landscape and North East India.
- ❖ Dholes occupy a wide variety of climates and habitats, such as dense forests, scrub, steppes, and alpine regions.
- ❖ Depending on their habitat, these wild dogs vary in color from charcoal gray to rust red to sandy beige.
- ❖ Dholes are highly social animals and frequently hunt in packs.
- ❖ Dholes maintain a very large territory of up to 34 square miles, helping them to find enough food to eat. Their territory is often shared with larger predators like tigers and leopards.
- ❖ Dholes play an important role as apex predators in forest ecosystems.
- ❖ **Protection status**
 - ✓ IUCN red list – Endangered
 - ✓ CITES- Appendix II
 - ✓ Wildlife Protection Act 1972- Schedule II

ABOUT DEBRIGARH WILDLIFE SANCTUARY

- ❖ It is located in the Bargarh district in Odisha.
- ❖ It is situated near Hirakud Dam.
- ❖ **Area- 347 Sq km**
- ❖ The sanctuary finds a special mention because of noted freedom fighter Veer Surendra Sai.

- ✓ During his rebellion against the British Veer Surendra Saimade his base at 'Barapathara' located within the sanctuary.
- ❖ Flora- The sanctuary comprises dry deciduous forests. It is also home to plant species which have ethnobotanical and medicinal value.
- ❖ Fauna- The sanctuary is home to more than 40 species of mammals, 234 species of birds, 41 species of reptiles, 12 species of amphibians, 42 species of fishes, 39 species of odonates, 85 species of butterflies and is important Internationally because of significant population of Leopard, Bison and Chousingha. Indian Bison's, Wild Boars, Sambhar, Peacocks etc. are also found.

8.6 MHADEI WILDLIFE SANCTUARY

- ❖ The Goa Foundation has filed a contempt petition before the Bombay HC at Goa seeking action against the Goa government for not complying with the directions of the High Court to notify a tiger reserve in Mhadei Wildlife Sanctuary (WLS) and other contiguous areas of the state within three months.

ABOUT MHADEI WILDLIFE SANCTUARY (WLS)

- ❖ It is located in the Northern Part of Goa, near the village of Valpoi.
- ❖ The sanctuary covers a vast area of 208 sq. km.
- ❖ Its official declaration as a wildlife preserve came in 1999.
- ❖ The formation of this sanctuary made Goa the only state in the country that protects the entire area of the Western Ghats that falls within the state.
- ❖ Flora
 - ✓ Moist deciduous vegetation and some evergreen species too.
 - ✓ The sanctuary is particularly well-known for its sacred groves that protect rare and indigenous trees.
 - ✓ One of the most unusual trees found here is an evergreen variety of the Ashoka tree with peculiar saffron coloured flowers.
- ❖ Fauna- Indian gaur, Barking deer, Sambar deer, Asian palm civet, small Indian civet, Wild boar, Indian hare, Ruddy mongoose, Black-faced langur and Bonnet macaque.
 - ✓ Some seen more rarely include the Black Panther, Sloth bear, Leopard, Tiger, Dhole, Jungle cat, Mouse deer, Giant squirrel, Flying squirrel, Indian pangolin and the Slender loris.

8.7 WHITE HYDROGEN

- ❖ According to a report in the CNN, in northeastern France, two scientists, Jacques Pironon and Phillipe De Donato, embarked on a mission to assess the amount of methane in the subsoils of the Lorraine mining basin but unexpectedly discovered hydrogen concentrations deep underground.
- ❖ Their findings indicated a vast reservoir of hydrogen, potentially one of the largest deposits of white hydrogen ever discovered.

ABOUT WHITE HYDROGEN

- ❖ White hydrogen, also known as "natural," "gold," or "geologic" hydrogen, is a naturally occurring form of hydrogen found in the Earth's crust.
- ❖ Hydrogen, when burned, only produces water, making it an ideal clean energy source.
- ❖ Industries such as aviation, shipping, and steel-making, could benefit from hydrogen as an alternative to renewables like solar and wind.
- ❖ However, most commercially produced hydrogen is derived from energy intensive processes powered by fossil fuels.
- ❖ The various types of hydrogen are categorized by colors-
 - ✓ "grey" from methane gas,
 - ✓ "brown" from coal, and
 - ✓ "blue" hydrogen, similar to grey but with captured emissions.

- ✓ “Yellow” hydrogen refers to hydrogen that is specifically produced through electrolysis using solar energy.
- ✓ Purple/pink hydrogen is generated from electrolysis using nuclear power.
- ✓ The most eco-friendly is "green" hydrogen, produced using renewable energy to split water.
 - However, its production is limited and costly.
- ❖ White hydrogen has several advantages-
 - ✓ Causes no CO₂ emissions when used as a fuel.
 - ✓ Is compatible with existing infrastructure and technologies for hydrogen production and utilization.
 - ✓ Is cheaper and more efficient than steam reforming or electrolysis.
 - ✓ Is abundant and renewable in nature.

8.8 GUNDLA BRAHMESWARAM WILDLIFE SANCTUARY

- ❖ In a first-of-its-kind, over 50 grass species were identified during workshop and survey on ‘Grasses Identification and Grassland Management’ at the Gundla Brahmeswaram Wildlife Sanctuary in the Nagarjunasagar-Srisailem Tiger Reserve (NSTR).
- ❖ The NSTR comprises two sanctuaries, namely the Rajiv Gandhi Wildlife Sanctuary and the Gundla Brahmeswaram Sanctuary.

ABOUT GUNDLA BRAHMESWARAM SANCTUARY.

- ❖ It is situated between Kurnool and Prakasam districts in Andhra Pradesh.
- ❖ Area- 1194 km sq
- ❖ It is situated on Gundla Brahmeshwaram plateau which runs from south to north of the Nallamala Hills.
- ❖ It is located between two important hill passes known as "Mantralamma kanuma" and "Nandi kanuma".
- ❖ Gundlakamma river flows through the sanctuary on its eastern side.
- ❖ Renowned as one of the most picturesque forest areas in India, the sanctuary have mixed deciduous forest of Terminalia, Albizzia, Teak, Pterocarpuss, Anogeissius, Andug, Bamboo Dalbergia, Boswellia and Shisham at ease here.
- ❖ Fauna includes Wild Dog, Bonnet Monkey, Jungle Cat, Hyena, Tiger, Panther, Sloth Bear, Langur, Pangolin, Chinkara, Nilgai, Chowsingha, Mouse Deer, Python, Sambar, Crocodile and Monitor Lizard.
 - ✓ The main attractions of the Wildlife Sanctuary include Tufted Gray Langur and Mouse deer.

8.9 MINAMATA CONVENTION

- ❖ The fifth meeting of the Conference of the Parties to the Minamata Convention on Mercury (COP5) took place in Geneva, Switzerland.
- ❖ It made significant progress by adopting 23 decisions to keep protecting human health and the environment from the harmful effects of mercury.

MAJOR OUTCOMES

- ❖ It noted the importance of broadening the participation of Indigenous Peoples, as well as local communities and eliminate mercury use in artisanal and small-scale gold mining (ASGM).
- ❖ Parties decided to amend Annex A to the Convention with new phase-out dates for certain batteries, switches, relays and fluorescent lamps.
- ❖ It was decided to amend Annex B with a 2025 phase-out date for the production of polyurethane using mercury catalysts.
- ❖ Parties agreed on a 15 mg/kg total concentration of mercury as the threshold for wastes contaminated with mercury or mercury compounds.

Annex of convention

Includes

Annex A

Mercury-added products

Annex B

Manufacturing processes in which mercury or mercury compounds are used

Annex C

Artisanal and small-scale gold mining

Annex D

List of point sources of emissions of mercury and mercury compounds to the atmosphere

Annex E

Arbitration and conciliation procedures

ABOUT MINAMATA CONVENTION ON MERCURY

- ❖ The Minamata Convention on Mercury is the **most recent global agreement on environment and health, adopted in 2013.**
- ❖ It is named after the bay in Japan where, in the **mid-20th century, mercury-tainted industrial wastewater poisoned thousands of people, leading to severe health damage** that became known as the “**Minamata disease**”.
- ❖ Since it **entered into force on 16 August 2017, 147 Parties have been working together** to control the **mercury supply and trade, reduce the use, emissions and releases of mercury, raise public awareness, and build the necessary institutional capacity.**
 - ✓ India ratified it in 2018.
 - ✓ **Mercury may have toxic effects on nervous system, thyroid, kidneys, lungs, immune system, eyes, skin etc.**

8.10 ATTENBOROUGH ECHIDNA

- ❖ More than **sixty years after it was last recorded, an expedition team has rediscovered an iconic, egg-laying mammal** in one of the most unexplored regions of the world.

ABOUT THE SPECIES

- ❖ **Scientific name- Zaglossus attenboroughi**
- ❖ **Attenborough’s long-beaked echidna, named after famed broadcaster Sir David Attenborough, was captured for the first time in photos and video footage using remote trail cameras set up in the Cyclops Mountains of Indonesia’s Papua Province.**
- ❖ It was **last seen in 1961.**
- ❖ It belongs to the **monotreme group of mammals, known for their unique characteristic of laying eggs.**
 - ✓ This echidna is one of the five surviving monotreme species.
- ❖ Echidnas are **notoriously difficult to find** since they are **nocturnal, live in burrows, and tend to be very shy.**
- ❖ **Attenborough’s long-beaked echidna has never been recorded anywhere outside the Cyclops Mountains.**
- ❖ It is **currently classified as Critically Endangered** on the **IUCN Red List of Threatened Species.**

8.11 RED SANDERS AND CITES

- ❖ **India has been removed from Review of Significant Trade (RST) for Red Sanders, under Convention on International Trade in Endangered Species (CITES).**
- ❖ It can **be a major boost to farmers who grow Red Sanders for export.**
- ❖ India was **under the Review of Significant Trade (RST) process for Red Sanders since 2004.**
- ❖ **RST is a process through which the CITES Standing Committee places increased scrutiny on the exports of a species from a country to determine if the Convention is being properly implemented.**
- ❖ The **CITES RST process enables disciplinary action in the form of trade suspensions directed at countries that do not meet their obligations.**

ABOUT CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES (CITES)

- ❖ CITES is an international agreement (Secretariat - Geneva, Switzerland) between governments to ensure that international trade in wild animals and plants does not threaten the survival of the species.
 - ✓ It is also known as the **Washington Convention**.
- ❖ The Convention provides a framework for the member nations. The framework includes-
 - ✓ regulations for the import, export, and re-export of listed species,
 - ✓ establishment of permits and certificates,
 - ✓ creation of a list of species that are subject to trade controls, and
 - ✓ the prohibition of trade in certain species.
- ❖ It is a global treaty established in 1975.
- ❖ CITES currently has 183 member nations.
 - ✓ India has been a party to the CITES since 1976.
- ❖ Secretariat – Geneva, Switzerland
- ❖ Although CITES is legally binding on the Parties, it does not replace national legislation.

ABOUT RED SANDERS

- ❖ Red sanders (*Pterocarpus santalinus*) is a high market value tree
- ❖ It is restricted to Eastern Ghats and endemic to few districts in Andhra Pradesh.
- ❖ Red Sanders usually grow in the rocky, degraded and fallow lands with Red Soil and hot and dry climate.
- ❖ The species has been listed as Appendix II under CITES since 1994.
- ❖ IUCN red list- Endangered
- ❖ Threats - illegal harvesting and smuggling, leading to depletion from natural forests.

8.12 TADOBA ANDHARI TIGER RESERVE

- ❖ Tadoba-Andhari Tiger Reserve's (TATR) dominant tiger Bajrang, who got its sobriquet given its shape and size, is said to have sired at least 50 cubs during his lifetime in an around Tadoba, died in a territorial fight with another powerful tiger Chhota Matka.
- ❖ Dominant male tiger protects his cubs around his territory and kills other male tigers intruding the area.

ABOUT TADOBA-ANDHARI TIGER RESERVE

- ❖ It is located in the Chandrapur district in Maharashtra.
- ❖ The reserve falls in the Central Plateau province of the Deccan peninsula.
- ❖ It is the largest and oldest Tiger Reserve of Maharashtra.
- ❖ Total area - 625.4 sq. km.
- ❖ Its landscape connects the tiger population of Maharashtra with that of Indravati in Chhattisgarh.
- ❖ Vegetation is tropical dry deciduous forests with species like Teak, Ain, Bamboo, Bija, Dhaoda, Haldu, Salai, Semal and Tendu. Bamboo is spread over 40% of the habitat.
- ❖ Fauna -include the tiger, leopard, sloth bear, wild dog, gaur, chital, and sambar.
- ❖ Also about 280 species of birds are found, apart from reptiles (54 species), amphibians (11 species), and fishes (84 species).
- ❖ The Tadoba-Andhari Tiger Reserve (TATR) has seen an increase in its tiger population from 87 in 2022 to 93 in 2023.
 - ✓ The survey conducted by TATR recorded 44 male and 47 female tigers, with the gender of two individuals unidentified.

8.13 CYRTODACTYLUS VAIRENGTENSIS

- ❖ A team of scientists and researchers have discovered a new species of gecko endemic to Mizoram, taking the number of geckos native to the state to 6, and 22 across northeast India.

- ❖ The **new species** has been named '**Cyrtodactylus vairengtensis**' after the **town in Mizoram** where it was found, while the **common name** suggested for the new species is '**Vairengte bent-toed gecko**'.
- ❖ The **distinct feature** of this new species is the **number of femoral pores which distinguishes it from other members of the Cyrtodactylus family**.
 - ✓ **9-11 preloacal** (also called femoral) pores were found in males and **5-9 preloacal pits** were found in females.
 - ✓ **Femoral pores** are located on the **underside of the hind legs in lizards** that **secrete a mixture of lipids and proteins** and are **thought to be used to attract mates and mark territories**.

There are **335 gecko species** across the world, of which **42** are found in India.

8.14 CLIMATE CHANGE ACTION PLAN

- ❖ **269 actions** have been planned to mitigate the impact of climate change in the city of Bengaluru.
- ❖ **Urban heat, urban flooding, droughts, thunderstorms, lightning and air pollution** have been identified as **climate and environmental hazards** in the **Bengaluru Climate Action Plan**.
- ❖ Of these **269 action plans**, Bruhat Bengaluru Mahanagara Palike (**BBMP**) will be responsible for executing **143**.
- ❖ **Priority sectors** identified for developing climate change mitigation strategies are **stationary energies, buildings, transportation, solid waste management, air quality, water, waste water, stormwater management, urban planning, greening, biodiversity and disaster management**.
- ❖ **Definition**
 - ✓ **CCAP**- It is the **process of developing a framework for identifying and implementing climate actions (mitigation as well as adaptation)** for a city along with **its developmental plans to improve its climate resilience**.

ABOUT C40 NETWORK

- ❖ Bengaluru is a **co-lead** of the **Global Air Quality Network for the C40 cities global network**.
 - ✓ Other Indian cities part of the C40 network in India are **Mumbai, Delhi, Kolkata, Chennai and Ahmedabad**.
- ❖ **C40** is a **global network of nearly 100 mayors of different cities** across the globe that are united to confront the **climate crisis**.
- ❖ As part of the signatory of the C40 cities, the commitment from the cities is to **reduce carbon (CO₂) emission by 2030 and achieve carbon neutrality by 2050**.

8.15 GLYPHOSATE

- ❖ **European Union** has allowed use of controversial weedkiller **glyphosate** for **10 more years**.
- ❖ However, renewal of the licence is "**subject to certain new conditions and restrictions**".
- ❖ **These include**
 - ✓ a **ban on the use of the chemical to dry crops before harvest**, and "**the need for certain measures to protect non-target organisms**".
 - ✓ Governments can **still restrict the use of glyphosate in their own countries if they consider the risks too high**, particularly in regard to the need to protect biodiversity.

ABOUT GLYPHOSATE

- ❖ **Molecular formula**- **C₃H₈NO₅P**.
- ❖ **Glyphosate** is a **phosphonic acid** and **odourless white powder**.
- ❖ **Glyphosate** is the **active ingredient in Roundup**, the **world's most widely used herbicide**.
- ❖ It is a **non-selective systemic herbicide** that is **applied directly to plant foliage**.
- ❖ **Issues-**

- ✓ Health impacts of glyphosate range from **cancer, reproductive and developmental toxicity to neurotoxicity and immunotoxicity.**
- ✓ **Symptoms** include irritation, swelling, burning of the skin, oral and nasal discomfort, unpleasant taste and blurred vision.

IN INDIA

- ❖ Union Ministry of Agriculture and Farmers Welfare in October, 2022 allowed for only **restricted use of glyphosate** citing health hazards for humans and animals.
- ❖ **Only authorised Pest Control Operators are allowed to use it.**

8.16 MYRISTICA SWAMPS

- ❖ **Myristica swamps**, a rare and archaic forest ecosystem largely confined to **Kulathupuzha and Anchal forest ranges in Kollam, Kerala**, is facing **slow and steady degradation** due to multiple factors including **man-myristica conflict.**
- ❖ **Myristica swamps** are called **live fossils**, a **biodiversity hotspot** dominated by evergreen trees belonging to **Myristicaceae family**, one of the **oldest flowering plants on earth.**
- ❖ Since they are **habitats with a relic status** dating back to primordial times, the **swamps have great conservation value.**
- ❖ These are a **type of freshwater swamp forest** predominantly **composed of species of Myristica.**
- ❖ This **species has stilt roots, or knee roots** that **pop up above the water level to breathe** creating a **varied habitat for many life forms.**
- ❖ The swamps are **naturally patchy habitats** with a **high number of endemic species.**
- ❖ The **swamps are partially inundated for several months a year.**
- ❖ In **India**, these habitats are found in **Western Ghats** and **Andaman and Nicobar Islands.**
- ❖ Threats- **climate change** and the **drying up of water bodies.**
- ❖ There is a **need to regulate water harvesting from hill streams** to sustain the swamps.
 - ✓ Experts recommend **different strategies** that include **minimising anthropogenic disturbance, regulating visitors, preventing the invasion of non-swampy species** and **maintaining the hydrological balance of the habitat.**

8.17 GHOL FISH

- ❖ The **black-spotted croaker, or the ghol fish** — considered a fisherman's lottery — was declared the **state fish of Gujarat** recently.
- ❖ The fish is **usually found in the Indo-Pacific region** that stretches from the **Persian Gulf to the Pacific Ocean.**
- ❖ **Ghol fish** has the scientific name **Protonibea dianthus.**
- ❖ The Ghol fish is **also called Ghoti, Jewfish, Palli Kora, Pulli Panna and Kathalai.**
- ❖ While Ghol is **one of the costliest fish**, its **heart has tremendous medicinal value** which is why it is known as **'sea gold.'**
- ❖ It is **highly esteemed in East Asia** due to its **medicinal attributes.**
- ❖ The **air bladder of the Ghol fish** holds significant value in international markets, **especially in China, Hong Kong, and other countries**, where it is **commonly used in the preparation of soups.**
- ❖ Packed with a **wealth of nutrients** such as **iodine, omega-3, DHA, EPA, iron, taurine, magnesium, fluoride, and selenium**, this fish is considered a **nutritional powerhouse.**

8.18 GAMBUSIA FISH

- ❖ In **states like Andhra Pradesh, Odisha, and Punjab**, **mosquitofish** have been released into local **water bodies to address a mosquito menace.**
- ❖ A new study has revealed that **two species of mosquitofish** have invaded various ecosystems across **India.**

MOSQUITO BORNE DISEASES

- ❖ **The world's climate and habitats have changed noticeably** in the last century, accelerating the spread of **mosquito-borne diseases**.
- ❖ These diseases **prevail in more than 150 countries worldwide**, affecting **more than 500 million people**.
- ❖ In **India alone**, around **40 million individuals contract mosquito-borne diseases every year**.
- ❖ **Examples of mosquito borne diseases- Malaria, West Nile Virus, Dengue, Zika, Yellow Fever, Chikungunya.**

ABOUT GAMBUSIA FISH

- ❖ In such scenario, the **biological control of mosquitoes assumes importance**.
- ❖ In the **1960s**, introducing **mosquitofish in freshwater ecosystems to feed on mosquito larvae** – became prominent as **alternatives to chemical solutions like pesticides**.
- ❖ Among **mosquito predators**, there were **two species of mosquitofish, Gambusia affinis and Gambusia holbrooki**.
- ❖ In countries with governments that had approved this strategy, the authorities released them into freshwater ecosystems.
- ❖ However the **fish began to proliferate**, with their **populations eventually spreading far beyond their original habitats**.
- ❖ These **species of mosquitofish originated in the U.S.** but today have become global inhabitants.
- ❖ Threats- They are **notorious for their detrimental ecological impact**, including **displacing and preying on native fauna**, leading to the **extinction of native fish, amphibians, and various freshwater communities**.
- ❖ Checks-
 - ✓ Because of such threats, the **World Health Organisation stopped recommending Gambusia as a mosquito control agent in 1982**.
 - ✓ In 2018, the **National Biodiversity Authority** of the Government of India **also designated G. affinis and G. holbrooki as invasive alien species**.
 - But both government and non-governmental organisations in India have continued to introduce these species for mosquito-control.

In 1928, Gambusia was first introduced in India during British rule.

8.19 NIDIRANA NOADIHING

- ❖ Scientists have discovered a **new species of 'music frog' in Arunachal Pradesh**.
- ❖ The speciality of this new species, **Nidirana noadihing**, is that **both the male and female are vocal**.
- ❖ It has a **unique call pattern consisting of two-three notes**.
- ❖ The new species **was named after the Noa-Dihing River**, which is near where the specimens were discovered and collected.
- ❖ Appearance
 - ✓ The frog has a **"robust" body**, with **males measuring between approximately 1.8 inches and 2.3 inches long** and **females measuring between about 2.4 inches and 2.6 inches long**.
 - ✓ The frogs have a **'rounded' snout and 'smooth' skin with bony protrusions on their backs**.
 - ✓ The amphibians have a **'pale cream' line bordered with dark brown running down the centre of their bodies**.
 - ✓ Their **light brown limbs are adorned with dark stripes**.
- ❖ According to the scientists, the **new species confirmed for the first time that the Nidirana genus has been found in India**.
 - ✓ **Nidirana species are known in Japan, Taiwan, China, Vietnam, Laos and Thailand**.
 - ✓ **Nidirana are known to inhabit swamps, ponds and paddy fields, and they often construct nests to lay their eggs**.
- ❖ Thus, **Noa-Dihing Music Frogs are distinguished from other species by their size, their oval toe tips, the tubercles on their backs and their unique call**.

8.20 IGBC INTRODUCES NEW GREEN RATINGS

- ❖ **Indian Green Building Council** has introduced **new green rating tools** as part of its **Net Zero mission** to accelerate the **uptake of green building projects in the country**.
 - ✓ IGBC launched the **mission of 'Net Zero'** with the **vision of facilitating India** to become **one of the foremost countries in transforming to Net Zero by 2050**.
- ❖ The **new green rating tools of IGBC** were launched at the **Indian Green Building Congress, held in Chennai**.
- ❖ They include **Net Zero Carbon Rating** and upgraded rating systems - **Green Existing Building Rating Version 1.0, Green Factory Rating Version 2.0, and Green Campus Rating Version 1.0**.
- ❖ The **new rating tool IGBC Net Zero Carbon (pilot Version) rating system** is described as **another key step to reduce operational and embodied emissions**. The rating system **has been developed based on the consensus and support of all the relevant stakeholders**.
 - ✓ It is a **voluntary and consensus-based programme for both new and existing buildings and campuses**.
 - ✓ The rating tool has been **designed to encourage the use of low-embodied carbon materials, optimise the buildings' performance and use on-site and off-site renewable energy systems and carbon sequestration measures**.
- ❖ **Green Existing Building Rating Version 1.0** is an **improved version of the pilot system after taking feedback from all stakeholders**, while **Green Campus Rating Version 1.0** seeks to rate **not just the building alone, but also the building environment**.

ABOUT IGBC

- ❖ IGBC was established by the **Confederation of Indian Industry (CII)** in **2001** to actively promote the **Green Building concept in India**.
- ❖ IGBC has **facilitated more than 11,500 projects across the country with a green footprint of over 10.42 billion sq ft**.
- ❖ This has made **India a global leader in the sustainable built environment with the second largest green building footprint in the world**.

The **building and construction sector in India** accounted for **nearly one-third of the total GHG emissions inventory covering both operational and embodied emissions in 2021**.

8.21 SANGAI DEER

- ❖ The **Manipur Government** has expressed its **reservations to the Centre over a hydro-electric modernisation plan in the state's famous Loktak Lake** saying it could be **detrimental to the endangered species of Sangai deer** apart from **disturbing the biodiversity of the lake**.

ABOUT SANGAI DEER

- ❖ Scientific Name- **Rucervus eldii**
- ❖ The **brow-antlered deer**, commonly known as the **Sangai**, a **unique and rare species found exclusively in Manipur's Keibul Lamjao National Park (KLNP)**.
 - ✓ Keibul Lamjao is the **only floating national park in India**.
- ❖ It is **the State animal of Manipur**.
- ❖ Their **unique floating habitat**, traditionally known as **'fumdi'**, is **made of mats of soil, plants and organic matter**.
- ❖ Once distributed throughout the **Manipur State**, Sangai is now **restricted to the 40 sq km area park and is numbered less than 100 adult individuals in the wild**.
- ❖ The animal's coat is a **dark reddish brown during winter months** and it becomes a **much lighter shade in summer**.
- ❖ The **brow-antlered deer usually consumes grass**.
- ❖ The deer has been **classified as 'endangered' on the International Union for Conservation of Nature (IUCN) Red List and added in Schedule I of the Wild Life (Protection) Act, 1972**.

ABOUT LOKTAK LAKE

- ❖ Loktak Lake is regarded as among the **most beautiful and ecologically diverse lakes in the Northeast.**
- ❖ Loktak lake was initially designated as a wetland of international importance under the Ramsar Convention in 1990.
- ❖ Later it was also listed under the Montreux Record in 1993.

8.22 BARDA WILDLIFE SANCTUARY

- ❖ The Gujarat forest department on recently **presented its proposal to make Barda Wildlife Sanctuary (BWLS), the second home to the lions before the national steering committee meeting held as part of "Project Lion @ 2047".**
- ❖ The Asiatic lions at present are restricted to Gir National Park and Sanctuary.
- ❖ The **population of lions increased from 523 in 2015 to 674 in 2020.**

Asiatic Lion (Panthera Leo)

- IUCN red list – **Endangered**
- Wildlife (Protection) Act 1972 - **Schedule I**
- CITES- **Appendix I**

ABOUT BWLS

- ❖ Barda is **about 15 km from Porbandar town coast and about 100 km from Gir forest.**
- ❖ The sanctuary is spread in about 192 sq km.
- ❖ It was **declared as sanctuary in 1979.**
- ❖ It **has an abundance of floral diversity.**
 - ✓ This is the **only ecological unit in the State, where more than 650 flowering plants have been recorded.**
- ❖ **Flora** includes Gorad, Babul, Dhav, Rayan, Ber, Jamun, Aml, Dhudhlo, Bamboo etc.
- ❖ **Important fauna** are blue bull, chinkara, blackbuck Leopard, Hyena, Wild boar, , Jackal, and wolf.
- ❖ To develop Barda as the second home for the Asiatic lion the State Government implemented the 'Gir-Barda Project' in 1979.
- ❖ There are **breeding centres of spotted deers in the sanctuary which will help in augmenting the prey base of lions.**

8.23 DEEPOR BEEL

- ❖ Assam state government intends to **“simply rules” to allow water sports and tourism-related activities in ‘Deepor Beel’**

ABOUT DEEPOR BEEL

- ❖ It is a **perennial freshwater lake located 10 km south-west of Guwahati city.**
- ❖ The lake expands up to 30 sq. km in summer and reduces to about 10 sq. km in the winter.
- ❖ It is the **only major storm-water storage basin for Guwahati city.**
- ❖ It has been **designated as a site of importance for “conservation and sustainable use” under the Ramsar Convention on Wetlands.**
- ❖ It is the **only Ramsar site in Assam.**
- ❖ It **sustains over 200 species of birds, including about 70 species of migratory birds.** For e.g- Spot-billed Pelican, Lesser Greater Adjutant Stork and Baer's Pochard etc.
- ❖ It was **notified as Eco-Sensitive Zone in 2021.**

8.24 SAURAUIA PUNDUANA

- ❖ Saurauia Punduana plant has been recorded for the first time in Manipur’s Tamenglong district.

ABOUT SAURAUIA PUNDUANA

- ❖ Flowers of *Saurauia Punduana* turn white to pink on maturity.
- ❖ Petals are pink, ovate to obovate curled at the tip.
- ❖ Its fruits are spherical shining white, and are used in veterinary medicine.
- ❖ The native range of this species is from Bhutan to Southeastern Tibet.
- ❖ It is a critically endangered species as per the International Union for Conservation of Nature (IUCN) Red List.

9. POLICY AND PROGRAMME

9.1 'MERA YUVA BHARAT (MY BHARAT)'

- ❖ The Prime Minister launched 'Mera Yuva Bharat (MY Bharat)' platform for youth of the country on October 31st, at Kartavya Path on the National Unity Day.

ABOUT MERA YUVA BHARAT (MY BHARAT)

- ❖ Mera Yuva Bharat (MY Bharat), an autonomous body will benefit the youth in the age group of 15-29 years, in line with the definition of 'Youth' in the National Youth Policy.
 - ✓ In the case of programme components specifically meant for adolescents, the beneficiaries will be in the age group of 10-19 years.
- ❖ It is 'Phygital Platform' (physical + digital) comprising physical activity along with an opportunity to connect digitally.
- ❖ Nodal Ministry- Ministry of Youth Affairs & Sports
- ❖ 'Mera Yuva Bharat (MY Bharat)' is envisioned as a pivotal, technology-driven facilitator for youth development and youth-led development, with the overarching goal of providing equitable
- ❖ It envisions a framework where the youth of our country can seamlessly connect with programs, mentors, and their local communities.
- ❖ Objectives-The primary objective of Mera Yuva Bharat (MY Bharat) is to make it a whole of Government platform dedicated to the advancement of the youth. Its objectives include-
 - ✓ Leadership Development in the Youth
 - ✓ Better alignment between the aspirations of the youth and the community needs
 - ✓ Enhanced efficiency through Convergence of existing programmes
 - ✓ Act as a one-stop shop for young people and Ministries
 - ✓ Create a centralized youth database
 - ✓ Improved two-way communication to connect youth government initiatives and activities of other stakeholder that engage with youth
 - ✓ Ensuring accessibility by creating a Phygital Ecosystem - a blend of physical and digital experiences.

9.2 SCHEME TO PROVIDE FINANCIAL ASSISTANCE TO POOR PRISONERS

- ❖ The government is pushing for Centrally-funded scheme to provide financial support to poor prisoners who are forced to remain in jail due to inability to pay the fine imposed on them or cannot secure bail due to financial constraints.
- ❖ The home ministry has asked all the state and UT prison departments to direct its concerned officers to activate the scheme on an urgent basis.
- ❖ States and union territories were earlier advised through the guidelines to constitute an 'empowered committee' in each district, which will assess the requirement of financial support in each case for securing bail or for payment of fine, etc.
- ❖ Based on the decision taken, the district collector or district magistrate will take necessary action to provide assistance to the prisoner.

9.3 SYSTEMATIC VOTERS' EDUCATION AND ELECTORAL PARTICIPATION (SVEEP)

- ❖ In a bid to **address voter apathy among young Indians**, the **National Council of Educational Research and Training (NCERT)** will both **introduce and update textbooks** to include content on **electoral literacy** and will **advise State Education Boards and other Boards to follow suit**.
- ❖ Beginning with **classes 6 to 12 in all schools**, this integration **will also extend to the curricular framework for all colleges and universities**.
- ❖ The measures are part of a **Memorandum of Understanding signed** between the **Election Commission of India and the Education Ministry**.
- ❖ It is aimed at **extending the ECI's flagship Systematic Voters' Education and Electoral Participation (SVEEP) in schools and colleges**.

ABOUT SVEEP

- ❖ **Systematic Voters' Education and Electoral Participation program (SVEEP)**, is the **flagship program of the Election Commission of India** for voter education, spreading voter awareness and promoting voter literacy in India.
- ❖ **It was launched in 2009**.
- ❖ Its **primary goal** is to build a **truly participative democracy in India** by **encouraging all eligible citizens to vote** and make an **informed decision during the elections**.
- ❖ SVEEP is **designed according to the socio-economic, cultural, and demographic profile of the state** as well as **history of electoral participation in previous rounds of elections**.
- ❖ The Commission **produces several voter awareness materials** and **disseminates the same through various mediums/platforms** of communication i.e **Print Media, Electronic Media, Social Media etc**.
- ❖ The **objectives** envisaged for **SVEEP as per the strategy document for 2022-25** are-
 - ✓ Increase **voter turnout to 75% in Lok Sabha elections 2024**
 - ✓ To **enhance the quality of electoral participation in terms of informed and ethical voting through continuous electoral and democracy education**.

9.4 PRADHAN MANTRI GARIB KALYAN ANN YOJANA (PMGKAY)

- ❖ **Pradhan Mantri Garib Kalyan Ann Yojana (PMGKAY)** has been **extended by Centre government by 5 years till 2028**.

ABOUT PMGKAY

- ❖ Introduced in **2020 during the Covid-19 pandemic**, the **PMGKAY was launched with the aim of providing 5 kg of free foodgrains to eligible ration card holders under the National Food Security Act, 2013**.
- ❖ The **scheme was slated to be in place up until December 2023**, but has been **extended again now for another five years**.
- ❖ The **PMGKAY covers two types of ration card holders under the NFSA**—those falling **under the Antyodaya Anna Yojana (AAY) and Priority Households (PHH)**, both of which were **integrated with the PMGKAY in January 2023**.
- ❖ While **AAY and PHH beneficiaries were entitled to 35 kg of free foodgrains** (regardless of the number of family members) and **5 kg of free foodgrain for each family member respectively**, the **PMGKAY, when it was launched, offered free rations in addition to the aforementioned allotments**.
- ❖ **Identification of beneficiaries**
 - ✓ **PHH** are to be **identified by State Governments/Union Territory Administrations as per criteria evolved by them**.
 - ✓ **AAY families** are to be **identified by States/UTs as per the criteria prescribed by the Central Government**.
- ❖ As of **January 2023, there were over 81.35 crore beneficiaries of the PMGKAY scheme**, equivalent to over two-thirds of India's population.

9.5 LEAP AHEAD

- ❖ **Software Technology Parks of India (STPI) with Indus Entrepreneurs (TiE) Delhi-NCR has launched the LEAP AHEAD initiative in collaboration.**
- ❖ **This program aims to bolster tech startups by offering them access to funding, mentorship, and global connections.**
- ❖ **The LEAP AHEAD (Launchpad for Tech Entrepreneurs towards Accelerated Growth and Pioneering AHEAD) initiative is a pan-India programme designed to support startups that show early traction and are in the growth stage.**
- ❖ **It offers startups an array of benefits including-**
 - ✓ **an intensive three-month hybrid mentorship program,**
 - ✓ **the opportunity for one-on-one mentorship with investors and industry experts,**
 - ✓ **funding of up to ₹1 crore in a co-investment model, networking and global market exposure,**
 - ✓ **a one-year free associate membership with TiE Delhi-NCR,**
 - ✓ **incubation in STPI's centers across India, and**
 - ✓ **additional benefits from third-party service providers.**
- ❖ **Startups eligible for this initiative include those involved in software product development, registered with DPIIT under the Startup India program, and have demonstrated revenue generation and external investment.**

ABOUT STPI

- ❖ **In 1991, Software Technology Parks of India (STPI) was set up as an autonomous society in the field of Science & Technology under the Ministry of Electronics and Information Technology (MeitY).**

9.6 KRISHI 24/7

- ❖ **Department of Agriculture and Farmers Welfare (DA&FW) in collaboration with Wadhvani Institute for Artificial Intelligence (Wadhvani AI) has developed Krishi 24/7.**
- ❖ **It is the first-ever AI-powered solution for automated agricultural news monitoring and analysis, with support from Google.org.**
- ❖ **Krishi 24/7 will aid DA&FW to identify relevant news, generate timely alerts, and take prompt action to protect farmers' interests and promote sustainable agricultural growth through improved decision-making.**
- ❖ **The tool scans news articles in multiple languages and translates them into English.**
- ❖ **It extracts essential information from news articles, such as headline, crop name, event type, date, location, severity, summary, and source link, ensuring that the ministry receives timely updates on relevant events published on the web.**

9.7 DDU- NRLM

- ❖ **Deen Dayal Antyodaya Yojana – National Rural Livelihood Mission (DAY-NRLM) has signed a memorandum of understanding (MoU) with the Small Industries Development Bank of India (SIDBI) to promote women-led enterprises among members of Self Help Groups (SHGs).**
- ❖ **This includes-**
 - ✓ **enhanced capacity and ability of State Rural Livelihood Missions (SRLM) teams to promote the graduation of seasoned SHG members into micro-entrepreneurs;**
 - ✓ **, establishment of a reliable and sensitive support architecture for women-led enterprises, involving a network of field cadres, mentors, and experts;**
 - ✓ **implementation of standardized protocols within DAY-NRLM to support women-led enterprises.**

ABOUT DAY-NRLM

- ❖ DAY-NRLM is the flagship initiative to cover **7 crore rural poor households, across 600 districts, 6,000 blocks, 2.5 lakh gram panchayats and 6 lakh villages in the country through SHGs and federated institutions and support them for livelihoods collectives in a period of 8-10 years.**
- ❖ The scheme **enables one member (preferably a woman) from each rural poor household to be brought under the SHG network.**
- ❖ It is under the purview of **Ministry of Rural Development.**
- ❖ It adopts a **demand-driven approach, enabling the States to formulate their own State-specific poverty reduction action plans.**

ABOUT SIDBI

- ❖ **Small Industries Development Bank of India (SIDBI) is an independent financial institution aimed at aiding the growth and development of Micro, Small and Medium Enterprises (MSMEs)**
- ❖ It is a **statutory body set up under Ministry of Finance by an act of the Indian Parliament in 1990.**

9.8 \$400 MILLION LOAN AGREEMENT WITH ADB

- ❖ India signed a **\$400 million policy-based loan agreement with the Asian Development Bank (ADB) to create high-quality urban infrastructure, improve service delivery, and promote efficient governance systems.**
- ❖ The **sub-programme 1, approved in 2021 with the financing of \$350 million, established national-level policies and guidelines to improve urban services, while the latest sub-programme 2 supports investment planning and reform actions at the state and urban local body (ULB) levels.**
- ❖ **Sub-programme 2 supports the reforms initiated by the states and the ULBs in operationalising the national flagship programme of Atal Mission for Rejuvenation and Urban Transformation (AMRUT) 2.0 targeted for universal access of water supply and sanitation.**
- ❖ The programme also **envisages integrated planning reforms to control urban sprawls and foster systemic and planned urbanisation through enhancing the entire ecosystem of legal, regulatory, and institutional reforms.**
- ❖ Other **mission objectives will also be achieved by reducing water losses, recycling treated sewage for non-domestic use, rejuvenation of water bodies, and maintaining sustainable groundwater levels.**

ABOUT ADB

- ❖ It is a **multilateral development bank established on 19th December 1966.**
- ❖ It is committed to achieving a **prosperous, inclusive, resilient, and sustainable Asia and the Pacific while sustaining its efforts to eradicate extreme poverty.**
- ❖ **Members- 68 members (49 are from within Asia and the Pacific)**
- ❖ **Headquarters- Manila, Philippines**
- ❖ ADB's five largest shareholders are **Japan and the United States (each with 15.6% of total shares), the People's Republic of China (6.4%), India (6.3%), and Australia (5.8%).**

9.9 PM- JANMAN

- ❖ Prime Minister recently launched **two ambitious initiatives to mark the Jan Jatiya Gaurav Diwas, celebrated on November 15 every year on the birth anniversary of tribal icon Birsa Munda.**
- ❖ These include-
 - ✓ **PM Janman, aimed at social justice to the tribals with a budget allocation of ₹24,000 crore.**
 - The **PM Janjati Adivasi Nyaya Maha Abhiyan (PM-Janman) will work towards protection and nurturing of tribes - some of them living in remote jungles - which are on the verge of extinction.**
 - Under **PM Janman, the government has identified 75 tribal communities and primitive tribes with a population of lakhs who reside in more than 22,000 villages in the country.**
 - **Mission is based on providing basic amenities like safe housing, clean drinking water, education, health, road and sustainable livelihood etc.**

- ✓ **Viksit Bharat Sankalp Yatra** - a drive to create awareness and facilitate saturation of welfare schemes that will continue till January 26 across the country.

9.10 KARMAYOGI PRARAMBH

- ❖ **Karmayogi Prarambh** has marked its **one-year anniversary** recently.
- ❖ It is an **online orientation programme** under the **Ministry of Personnel, Public Grievances and Pensions**.
- ❖ The program aims to provide all the necessary details related to government policies for newly appointees recruited through Rozgar Melas.
- ❖ It includes a set of eight courses curated to help all Rozgar Mela appointees.
- ❖ It falls under the purview of Misson Karmayogi.

ABOUT MISSION KARMAYOGI

- ❖ **National Programme for Civil Services Capacity Building (NPCSCB) - Mission Karmayogi** was launched in 2020.
- ❖ It aims to create a professional, well-trained and future-looking civil service, that is imbued with a shared understanding of India's developmental aspirations, national programs and priorities.
- ❖ The key philosophy of NPCSCB is to create an ecosystem of competency driven training and Human Resource (HR) management by transitioning from a 'rules-based' system to the 'roles-based' system.
- ❖ The **National Programme for Civil Services Capacity Building** has six key pillars i.e.
 - ✓ Policy Framework
 - ✓ Institutional Framework
 - ✓ Competency Framework
 - ✓ Digital Learning Framework iGOT-Karmayogi (Integrated Government Online Training Karmayogi Platform)
 - ✓ The electronic Human Resource Management (eHRMS) and
 - ✓ The Monitoring and Evaluation Framework.
- ❖ The NPCSCB covers all civil servants (including contractual employees) across different ministries, department organisations and agencies of the Union Government.

9.11 'KRISHI SAKHIS'

- ❖ The **Ministry of Rural Development** and the **Ministry of Agriculture and Farmers' Welfare** jointly launched a training programme for '**Krishi Sakhis**' to promote natural farming.
- ❖ The programme was launched under the **Deendayal Antyodaya Yojana – National Rural Livelihoods Mission (DAY-NRLM)**.
- ❖ The initiative is aimed at training **50,000 'Krishi Sakhis'** to give them certification in a phased manner by the **National Centre for Organic and Natural Farming (NCONF)**, a subordinate office of the MoA&FW as the Nodal institution.
- ❖ Training modules have been prepared by the NCONF and sent to the **National Institute of Agricultural Extension Management (MANAGE)** for the final review.

ABOUT KRISHI SAKHIS

- ❖ **Krishi Sakhis** are **Community Agriculture Care Service Providers (CASPs)**.
- ❖ They are trained para extension professionals and practicing farmers at the grass root level.
- ❖ They encourage the adoption of environmentally friendly and economically viable agricultural methods by raising awareness.

9.12 AMPLIFI 2.0

- ❖ The **Union Ministry of Housing and Urban Affairs** is making **raw data from Indian cities** available on a **single platform for academics, researchers, and stakeholders to help data-driven policy making.**
- ❖ The **Amplifi 2.0 (Assessment and Monitoring Platform for Liveable, Inclusive and Future-ready urban India)** portal was launched in this context recently.
- ❖ Currently, **225 urban local bodies (ULB)** have been on-boarded, and **data for 150 cities** is available on the portal.
 - ✓ It is **hoped** that **data from the more than 4,000 Urban Local Bodies** will eventually be made available on the portal.
- ❖ The website **provides data on a range of information for several cities**, including, for example, **the total diesel consumption; the number of samples tested for water quality; the average annual expenditure on healthcare; the total number of people residing in slums; the fatalities recorded due to road accidents.**

10. INDEX AND REPORTS

10.1 “A FRAGILE STATE OF PREPAREDNESS: 2023 REPORT ON THE STATE OF THE WORLD’S PREPAREDNESS” REPORT

- ❖ The report has been released by **Global Preparedness Monitoring Board (GPMB).**

MAJOR FINDINGS

- ❖ The **world’s capacity to deal with a potential new pandemic threat** remains **inadequate.**
- ❖ **Significant weaknesses or declining capacities in critical areas of preparedness**, including **global coordination of research and development (R&D) efforts to address misinformation, community engagement, participation of low- and middle-income countries in decision-making, domestic and international financing of preparedness, independent monitoring**, and meaningful involvement of relevant actors.
- ❖ The **trust deficit between countries and between communities** is a **significant impediment to progress in strengthening preparedness.**

RECOMMENDATIONS

- ❖ **Evidence-based monitoring, including independent monitoring, is essential to increase effectiveness, ensure accountability, and build trust.**
- ❖ **Pandemic prevention, preparedness and response (PPPR) financing** requires **fundamental reform to free it from the limitations of development assistance and place it on a sustainable footing.**
- ❖ **Strengthening regional capacities for R&D, manufacturing and supply** will help to address the **inequities in global access to medical countermeasures.**
- ❖ **Urgent steps are needed to build trust through operationalizing principles of equity, leadership and accountability, and coherence within all measures to strengthen PPPR.**

ABOUT GLOBAL PREPAREDNESS MONITORING BOARD (GPMB)

- ❖ It was **created in response to recommendations** by the **UN Secretary General’s Global Health Crises Task Force in 2017 in the wake of 2014- 2016 Ebola epidemic.**
- ❖ The GPMB was co-convened by the **World Health Organization and the World Bank Group.**
- ❖ It was **formally launched in May 2018.**
- ❖ It is an **independent monitoring and accountability body to ensure preparedness for global health crises.**
- ❖ Secretariat- **Geneva, Switzerland.**
- ❖ **Members- 15 - member Board** is made up of **political leaders, heads of agencies, and experts.**

10.2 ADAPTATION GAP REPORT 2023

- ❖ The Adaptation Gap Report is an annual publication from United Nations Environment Programme (UNEP), released just ahead of the year-ending climate change conference, and presents the global situation of adaptation to climate change.
 - ✓ It has been published each year since 2014 by the UNEP.
- ❖ This year's report focuses on adaptation finance, or the availability of money to carry out the adaptation projects.

MAJOR FINDINGS

- ❖ Climate adaptation finance flows from public multilateral (like the World Bank) and bilateral sources (from a developed to a developing nation) declined by 15 per cent to around \$21 billion in 2021.
- ❖ Domestic budgets seem to be the largest source of funding for adaptation in many developing countries shelling out between 0.2 per cent to over 5 per cent of their government budgets.
- ❖ 85% of countries have at least one national-level adaptation planning instrument such as a policy, strategy, or plan in place to cope with climate change.
- ❖ Current global adaptation finance gap (difference between needs and actual financial flows) is \$194-366 billion per year.
- ❖ The finance needs of developing countries are now 10-18 times as big as international public finance flows.
- ❖ Only 2% of gender-tagged international adaptation finance is gender-responsive.

ABOUT UNEP

- ❖ The UNEP is a leading global environmental authority.
- ❖ It was founded in 1972 following UN Conference on the Human Environment.
- ❖ It sets the global environmental agenda, promotes the sustainable development within the United Nations system, and serves as an authoritative advocate for global environment protection.
- ❖ **Objective-** To contribute to the building of a culture of peace, the eradication of poverty, sustainable development, and intercultural dialogue through education, the sciences, culture, communication, and information.
- ❖ Headquarters- Nairobi, Kenya.
- ❖ Major initiatives- Beat Pollution, UN75, World Environment Day, Wild for Life.
- ❖ Major Reports- Emission Gap Report, Adaptation Gap Report, Global Environment Outlook, Frontiers, Invest into Healthy Planet.

10.3 HUNGER HOTSPOTS REPORT

- ❖ The release of the October 2023 Hunger Hotspots report by the World Food Programme (WFP) and the Food and Agriculture Organization (FAO) shows the complexity and interaction of conflict, climate impacts, economic shocks in key contexts by assessing the food security outlook for the next six months from November 2023 to April 2024.
- ❖ The report identifies 18 hunger "hotspots" in a total of 22 countries or territories where it is expected a significant deterioration of the already high levels of acute food insecurity, putting lives and livelihoods at stake.
- ❖ The report reveals that the countries with the highest level of concern are Burkina Faso, Mali, South Sudan, and Sudan, as well as newly assessed Palestine.

ABOUT WORLD FOOD PROGRAMME

- ❖ It is an international organization within the United Nations that provides food assistance worldwide.
- ❖ It is the world's largest humanitarian organization and the leading provider of school meals.
- ❖ It was founded in 1961 by Food and Agriculture Organization (FAO) and United Nations General Assembly (UNGA)
- ❖ WFP is headquartered in Rome and has offices in 80 countries.
- ❖ Vision - Eradicate food insecurity and malnutrition by 2030 (SDG 2 – Zero Hunger)
- ❖ The World Food Programme (WFP) has a presence in over 120 countries and territories to bring life-saving food to people displaced by conflict and made destitute by disasters.

10.4 ECOLOGICAL THREAT REPORT 2023

- ❖ **Ecological Threat Report 2023** was recently released by the Institute for Economics and Peace.
- ❖ The report covered 221 countries and independent territories, which were divided into 3,594 sub-national areas, accounting for 99.99 percent of the world's population.
- ❖ Of these countries and territories, 66 face at least one severe ecological threat.
- ❖ The report focuses on four categories of threat: Food insecurity, natural disasters, demographic pressure and water risk.

MAJOR FINDINGS

- ❖ The number of people residing in countries facing severe ecological threats will go up to 2.8 billion by 2050 from 1.8 billion at present.
- ❖ Many countries and sub-national areas are most vulnerable to conflict, civil unrest and displacement as a result of environmental degradation and climate-related events.
- ❖ Of the 30 hotspot countries that face severe ecological threats and have low levels of societal resilience, 19 are in sub-Saharan Africa.
 - ✓ The most at risk countries are Ethiopia, Niger, Somalia and South Sudan, of which Ethiopia and Niger have recently emerged as hotspots.
- ❖ Europe and North America are the only two regions where no country currently faced a severe ecological threat.
- ❖ The report included many policy recommendations aimed at supporting local communities to improve water capture, agricultural yields and resilience.

ABOUT INSTITUTE FOR ECONOMICS AND PEACE

- ❖ The Institute for Economics and Peace is an independent think tank.
- ❖ It is involved in developing global and national indices, calculating the economic cost of violence, analysing country level risk and fragility, and understanding Positive Peace.
- ❖ The Institute is headquartered in Sydney with offices in 6 countries.
- ❖ Founded by IT entrepreneur and philanthropist Steve Killelea in 2007, IEP has had a profound impact on traditional thinking on matters of security, defence, terrorism and development over the last 13 years.

10.5 STATE OF CLIMATE SERVICES REPORT 2023

- ❖ The World Meteorological Organization (WMO) has released its annual State of Climate Services report, which this year focuses on health.
 - ✓ The assessment has been published annually since 2019.
- ❖ The report, which underscores the impact of climate change on human health and well-being, incorporates contributions from the European Centre for Medium-Range Weather Forecasts, the Copernicus Atmosphere Monitoring Service, and the Copernicus Climate Change Service.

MAJOR FINDINGS

- ❖ World is warming at an unprecedented rate, posing severe threats to human health.
- ❖ The Intergovernmental Panel on Climate Change (IPCC) has expressed very high confidence that health risks related to injury, disease, and mortality will surge due to more frequent and intense temperature extremes, cyclones, storms, floods, droughts, and wildfires.
- ❖ Alarming, over 50% of excess mortality attributed to climate change by 2050 is expected to occur in Africa.
- ❖ Just 11% of countries have the full arsenal of tools required to save lives as the impacts of climate change — including deadly weather events, infectious diseases, and respiratory illnesses like asthma — become more extreme.
- ❖ Just 23% of countries assessed by the report use climatological data to inform their surveillance of potential health risks, which means much of the world is at a disadvantage.

- ❖ Poor air quality is the **fourth biggest killer by health risk factor**. Despite this, **only 2% of climate finance commitments made by international development funders** in developing and emerging countries is explicitly aimed at tackling air pollution.
- ❖ **Extreme heat** causes the **greatest mortality of all extreme weather**, yet **heat warning services** are provided to health decision makers in **only half of the affected countries**.

ABOUT WMO

- ❖ It originated from the International Meteorological Organization (IMO), which was founded in 1873 under Vienna International Meteorological Congress.
- ❖ Established in 1950, WMO became the specialized agency of the UN for meteorology (weather and climate), operational hydrology and related geophysical sciences.
- ❖ Headquarters- Geneva, Switzerland
- ❖ WMO has 193 Members, including 187 Member States and 6 Territories (India is a member).

10.6 GLOBAL LANDSCAPE OF CLIMATE FINANCE 2023

- ❖ Climate Policy Initiative's (CPI) has released a new report **Global Landscape of Climate Finance 2023**.
- ❖ Climate finance is one of the **key agenda items up for discussion** at the much-awaited **28th Conference of Parties (COP28)** to the United Nations Framework Convention on Climate Change to be held in Dubai later.

The Climate Policy Initiative (CPI) is an independent non-profit research group and international climate policy organization.

It is based in San Francisco, California with other offices worldwide.

MAJOR FINDINGS

- ❖ Average annual flow of climate finance in 2021 and 2022 was \$1.3 trillion, twice the \$653 billion of 2019 and 2020.
 - ✓ Climate finance flows have doubled compared to previous years but have been unevenly distributed across geographies and sources.
- ❖ China, the US, Europe, Brazil, Japan, and India received 90% of increased climate finance.
- ❖ 98% of all adaptation finance tracked for the report stemmed from public actors.
- ❖ Private actors contributed 49% of total climate finance, to the tune of \$625 billion.

10.7 GLOBAL TUBERCULOSIS REPORT 2023

- ❖ World Health Organisation recently released the Global TB Report.

MAJOR FINDINGS

- ❖ There was a major global recovery in the number of people diagnosed with TB and treated in 2022, after two years of COVID-related disruptions
- ❖ TB still remains the world's second leading cause of death from a single infectious agent.
- ❖ Global TB targets have either been missed or remain off track.
- ❖ The net reduction from 2015 to 2022 was 8.7%, far from the WHO End TB Strategy milestone of a 50% reduction by 2025.
- ❖ The reported global number of people newly diagnosed with TB was 7.5 million in 2022.
- ❖ TB caused an estimated 1.30 million deaths in 2022.

INDIA SPECIFIC FINDINGS

- ❖ India carried the highest burden of tuberculosis (TB) cases in the world in 2022, the report said.
- ❖ Around 87% of the world's total cases in 2022 emerged from 30 high TB-burden countries, with two-third of the cases registered from eight countries.
 - ✓ India with 27 per cent ranked highest, followed by Indonesia (10 per cent), China (7.1 per cent), the Philippines (7 per cent), Pakistan (5.7 per cent), Nigeria (4.5 per cent), Bangladesh (3.6 per cent) and the Democratic Republic of the Congo (3 per cent).

- ❖ In India, 2.8 million cases of TB were registered and of them, 342,000 people (12 per cent) died due to the disease, the report said.
- ❖ The “net decrease in TB-related deaths from 2015 to 2022 was 19 per cent, falling far short of the WHO End TB Strategy milestone of a 75 percent reduction by 2025”.

HEALTH MINISTRY RESPONSE

- ❖ India’s efforts have resulted in the reduction of TB incidence by 16 per cent from 2015 to 2022, almost double the pace at which global TB incidence is declining, which is 8.7 per cent.
- ❖ TB mortality has also reduced by 18% during the same period in India.

ABOUT TUBERCULOSIS

- ❖ Tuberculosis is a bacterial infection caused by *Mycobacterium tuberculosis*.
- ❖ The most common affected organs ones are lungs, pleura (lining around the lungs), lymph nodes, intestines, spine, and brain.
- ❖ It is spread through inhaling tiny droplets from the coughs or sneezes of an infected person.
- ❖ Symptoms include cough with sputum and blood at times, chest pains, weakness, weight loss, fever and night sweats.

TYPES

- ❖ Multidrug-resistant tuberculosis (MDR-TB) is a form of TB caused by bacteria that do not respond to isoniazid and rifampicin, the 2 most powerful, first-line anti-TB drugs.
 - It is treatable and curable by using second-line drugs such as Bedaquiline.
- ❖ Extensively drug-resistant TB (XDR-TB) is a more serious form of MDR-TB caused by bacteria resistant to isoniazid and rifampin, plus any fluoroquinolone and at least one of three injectable second-line drugs.
- ❖ Totally drugresistant tuberculosis (TDR-TB): Resistant to all first- and secondline TB drugs.

10.8 WORLD INTELLECTUAL PROPERTY INDICATORS (WIPI) REPORT

- ❖ World Intellectual Property Organisation (WIPO) recently released its annual World Intellectual Property Indicators (WIPI) report.

MAJOR FINDINGS

- ❖ In 2022, global patenting activity surged to a new record high, getting fillip by Indian and Chinese innovators as well as powered by increased levels of innovation, entrepreneurship and digitalisation in these countries.
- ❖ As per the report, innovators from around the world submitted 3.5 million patent applications in 2022, marking a third consecutive year of growth.
- ❖ Asia accounted for 67.9 per cent, 67.8 per cent and 70.3 per cent of global patent, trademarks and industrial designs filing activity in 2022.
 - ✓ The largest rise in filings was reported from India.
- ❖ The largest number of patents globally was in computer technology (11.1%), followed by electrical machinery (6.4%), measurement (5.8%), medical technology (5.2%) and digital communication (4.9%).

INDIA SPECIFIC

- ❖ Patent applications by residents of India grew by 31.6% in 2022, extending an 11-year run of growth unmatched by any other country among the top 10 filers.
- ❖ For the first time, there were more patents filed by Indian residents as against foreign filers, indicating at the country’s fast growing innovation ecosystem.
- ❖ In absolute terms, India accounts for the sixth largest number of patent applications globally.
 - ✓ China is by far the largest followed by the US, Japan, South Korea and European Union.

ABOUT WORLD INTELLECTUAL PROPERTY ORGANISATION (WIPO)

- ❖ The World Intellectual Property Organisation or WIPO is a global body for the promotion and protection of Intellectual Property Rights (IPR).

- ❖ It serves as a global forum for information, cooperation, policy, and services related to intellectual property (IP).
- ❖ Headquarters- Geneva, Switzerland
- ❖ It is a self-funding agency of the United Nations having 193 member states.
 - ✓ India became a member in 1975.

10.9 TOWARDS ELIMINATING PLASTIC POLLUTION BY 2040 REPORT

- ❖ The report 'Towards Eliminating Plastic Pollution by 2040' report was released by the **Organisation for Economic Co-operation and Development (OECD)**.
- ❖ The Report was released at the Third Session of the **Intergovernmental Negotiating Committee on plastic pollution (INC-3)**.

MAJOR FINDINGS

- ❖ In 2022, **21 million tonnes (MT)** of plastics leaked into the environment globally.
- ❖ **Primary plastics use would stabilise at 2020 levels by 2040.**
- ❖ Under the **baseline scenario**, plastics use would continue to grow, leading to a **50 per cent increase in leakage of macroplastics into the environment by 2040** — meaning about **30 MT of plastic would leak into the environment**, of which **9 MT would enter aquatic environments.**

RECOMMENDATIONS

- ❖ It provided a **clear roadmap for governments and policymakers** to tackle the **full lifecycle by curbing production and demand, increasing circularity, closing leakage pathways and bolstering recycling rates.**
- ❖ **Curb production and demand by targeted taxes and regulation.**
- ❖ **Make the plastic production process circular.**
- ❖ **Enhance recycling.**

10.10 THE CLIMATE CHANGED CHILD REPORT

- ❖ The **Climate Changed Child report** was recently released by **UNICEF**.
- ❖ It provides an **analysis of the impacts of three tiers of water security globally** – **water scarcity, water vulnerability, and water stress.**
- ❖ The report is a **supplement to the UNICEF's Children's Climate Risk (2021).**

MAJOR FINDINGS

- ❖ About **half of the world's children (953 million)** were exposed to **high or extremely high water stress in 2022.**
- ❖ **1 in 3 children** – or **739 million worldwide** – **already live in areas exposed to high or very high water scarcity**, with climate change threatening to make this worse
- ❖ Further, the **double burden of dwindling water availability and inadequate drinking water and sanitation services is compounding the challenge, putting children at even greater risk.**
- ❖ **India, Niger, Eritrea, Yemen, and Burkina Faso** had the **highest overall child exposure to high or extremely high-water vulnerability.**

ABOUT UNICEF

- ❖ **United Nations International Children's Emergency Fund (UNICEF)** was established in **1946** to provide **emergency food and healthcare** to children in countries that were devastated by **World War II.**
- ❖ **UNICEF** became a **permanent part of the United Nations in 1953.**
- ❖ **UNICEF works in over 190 countries and territories**, providing assistance to children and their families in areas such as **health and nutrition, education, child protection, water, sanitation, and hygiene.**
- ❖ Headquarters- **New York, USA.**
- ❖ It 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.**

10.11 GREENHOUSE GREEN BULLETIN

- ❖ **World Meteorological Organization** recently released **Greenhouse Green Bulletin 2023**.
- ❖ It analyses data from the **WMO Global Atmosphere Watch (GAW) Programme**.

MAJOR FINDINGS

- ❖ **Heat trapping greenhouse gas (GHG) concentrations** reached a **new record last year and continued to increase in 2023**.
- ❖ **Global averaged concentrations of carbon dioxide (CO₂)**, the most important greenhouse gas, in 2022 were a **full 50% above the pre-industrial era for the first time**.
- ❖ **Methane and Nitrous Oxide concentrations increased by 264% and 124% respectively** from pre-industrial levels in 2022.
 - ✓ Methane **remains in the atmosphere for about a decade**.
 - ✓ Methane accounts for about **16% of the warming effect of long-lived greenhouse gases** while **nitrous oxide accounts for about 7% of the radiative forcing**.
- ❖ The **(NOAA) Annual Greenhouse Gas Index** shows that from **1990 to 2022**, the **warming effect on our climate called radiative forcing by long-lived greenhouse gases increased by 49%**, with CO₂ accounting for about 78% of this increase.
- ❖ The **climate system may be close to so-called “tipping points”**, where a certain level of change leads to self-accelerating and potentially irreversible cascade of changes.

ABOUT WORLD METEOROLOGICAL ORGANIZATION

- ❖ The World Meteorological Organisation is an **intergovernmental organisation and specialised agency of the United Nations**.
- ❖ Its **mandate spans issues pertaining to weather, climate, and water resources**.
- ❖ Established- **1950**
- ❖ Headquarters- **Geneva, Switzerland**.
- ❖ It has **187 Member States (including India) and 6 Member Territories**

10.12 WORLD ENERGY EMPLOYMENT (WEE) REPORT

- ❖ The **second edition of the World Energy Employment (WEE) report** was released by **International Energy Agency**.
- ❖ It tracks the **evolutions of the energy workforce from before the pandemic, through the global energy crisis**.
- ❖ The report provides a **comprehensive stock-take of energy employment with estimates of the size and distribution of the labour force across regions, sectors, and technologies**.
- ❖ The dataset provides granularity on workers along the **entire energy value chain, covering fossil fuel supply, bioenergy, nuclear, low-emissions hydrogen, power generation, transmission, distribution, and storage**.
- ❖ Additionally, WEE 2023 includes for the first time **employment data for the extraction of selected critical minerals, including copper, cobalt, nickel and lithium**.
- ❖ **Global energy employment rose to 67 million people in 2022**, an increase of **3.5 million from pre-pandemic levels**.
- ❖ It said that **more than half of employment growth over this period was in five sectors: Solar PV, wind, electric vehicles (EVs) and batteries, heat pumps, and critical minerals mining**.
 - ✓ Of these, **solar PV is by far the largest employer**.

ABOUT INTERNATIONAL ENERGY AGENCY

- ❖ It was **established in the wake of the oil crisis of 1973-1974**, to help its members respond to major disruptions in oil supply.
- ❖ The IEA is **made up of 30 member countries**.
- ❖ Headquarters- **Paris, France**

- ❖ A candidate country to the IEA must be a member country of the **Organisation for Economic Co-operation and Development (OECD)**.
 - ✓ India joined this organization in 2017 as an Associate member.

10.13 EMISSIONS GAP REPORT 2023

- ❖ The latest **Emissions Gap Report** was released by the **UN Environment Programme (UNEP)**.
- ❖ The **emissions gap** is defined as the **difference between the estimated total global greenhouse gas (GHG) emissions resulting from the full implementation of the nationally determined contributions (NDCs), and the total global GHG emissions from least-cost pathways consistent with the Paris Agreement long-term goal of limiting global average temperature increase to well below 2°C, and pursuing efforts to limit it to 1.5°C relative to pre-industrial levels.**

MAJOR FINDINGS

- ❖ **GHG emissions increased by 1.2 per cent from 2021 to 2022 to reach a new record of 57.4 Gigatonnes of Carbon Dioxide Equivalent (GtCO₂e).**
- ❖ **At current pledges under the Paris Agreement, the world is on track for a 2.5-2.9°C temperature rise above pre-industrial levels this century.**
- ❖ **Until the beginning of October this year, 86 days were recorded with temperatures over 1.5°C above pre-industrial levels.**
- ❖ **September was the hottest recorded month ever, with global average temperatures 1.8°C above pre-industrial levels.**
- ❖ **Global low-carbon transformations are needed to deliver cuts to predicted 2030 greenhouse gas emissions of 28 per cent for a 2°C pathway and 42 per cent for a 1.5°C pathway.**

ABOUT UNITED NATIONS ENVIRONMENT PROGRAMME

- ❖ It is a leading **global environmental authority** established on 5th June 1972 after **Stockholm Conference on Human Environment**.
- ❖ It sets the **global environmental agenda**, promotes **sustainable development within the United Nations system**, and **serves as an authoritative advocate for global environment protection**.
- ❖ **UN Environment Assembly** is the **governing body**.
- ❖ **Membership** encompasses **all 193 UN Member States**.
- ❖ It is **part of the UN Secretariat** and **responds to the UN General Assembly**.
- ❖ **Headquarters- Nairobi, Kenya.**
- ❖ **Other Reports-** Adaptation Gap Report, Global Environment Outlook, Frontiers, Invest into Healthy Planet, Environmental Rule of Law Report etc.

10.14 GENDER-RELATED KILLINGS OF WOMEN AND GIRLS REPORT

- ❖ Recently, the **United Nations Office on Drugs and Crime (UNODC)** and **UN Women** released a **study titled- Gender-related killings of women and girls (femicide/feminicide), revealing an increase in gender-related killings of women and girls in 2022.**
- ❖ **Femicide or feminicide** refers to the **deliberate killing of women or girls purely because they are female.** It's a **gender-based crime rooted in deeply ingrained societal attitudes and discrimination against women.**

MAJOR FINDINGS

- ❖ Globally, **nearly 89,000 women and girls were killed intentionally in 2022, the highest yearly number recorded** in the past two decades.
- ❖ **Around 55% of total female homicide victims are killed by family.**
- ❖ **Africa** reported the **highest number of intimate partner/family-related homicides of women in 2022, surpassing Asia for the first time in 13 years.**
- ❖ **With respect to India**
 - ✓ India experienced a **slight decline** in gender-based killings over the past decade.

- ✓ Dowry-related reasons consistently topped the list as the leading cause of gender-related deaths in India.

ABOUT UNITED NATIONS OFFICE ON DRUGS AND CRIME (UNODC)

- ❖ It was established in 1997 by merging the United Nations Centre for International Crime Prevention and the United Nations International Drug Control Programme.
- ❖ It was named as UNODC in 2002.
- ❖ HQ- Vienna, Austria
- ❖ It has 20 field offices covering over 150 countries and works directly with Governments and non-governmental organizations.

11. INTERNATIONAL, SUMMITS

11.1 INTERNATIONAL SOLAR ALLIANCE

- ❖ The Sixth Assembly of the International Solar Alliance (ISA) was hosted at Bharat Mandapam, in New Delhi and was presided over by the Union Minister for Power and New & Renewable Energy.
- ❖ Ministers from 20 countries and delegates from across 116 Member and Signatory countries participated in the Assembly.

The ISA Assembly is the highest decision - making body. It has representatives from all member countries.

MAJOR OUTCOMES

- ❖ It was decided to increase viability gap funding for projects from 10% up to 35%.
 - ✓ The ISA has a programme for VGF so that viability gap funding is available for projects in developing countries.
- ❖ The Global Solar Facility (GSF) is set to receive a capital contribution of \$35 million dollars.
 - ✓ GSF will provide Payment guarantee fund, insurance fund to mitigate project risks and investment fund for Technical Assistance.
- ❖ Four projects set up with ISA's assistance were inaugurated-
 - ✓ Solarisation of the parliament building of the Republic of Malawi
 - ✓ Solarisation of two rural health care centres in the Republic of Fiji
 - ✓ Installation of 1 solar powered cold storage of capacity 5 MT for the benefit of agricultural stakeholders at La Digue Island, Republic of Seychelles
 - ✓ Solarisation of the Nawai Junior Secondary school (JSS) in the Republic of Kiribati

ABOUT INTERNATIONAL SOLAR ALLIANCE

- ❖ It is an Indian initiative, jointly launched by India and France in Paris, on the sidelines of COP-21, the UN Climate Conference held in Paris.
- ❖ HQ-Gurugram
- ❖ Members- 94 countries have signed and ratified (including India).
- ❖ It is guided by its 'Towards 1000' strategy, which aims-
 - ✓ To mobilize USD 1000 billion of investments in solar energy solutions by 2030
 - ✓ To deliver energy access to 1000 million people using clean energy solutions
 - ✓ To install 1000 GW of solar energy capacity.
 - ✓ To mitigate global solar emissions to the tune of 1000 million tonnes of CO2 every year.

11.2 INDIA BANGLADESH NEW PROJECTS

- ❖ Prime Ministers of India and Bangladesh jointly inaugurated three Indian assisted development projects recently.
- ❖ The three projects are -

- ✓ The **Akhaura-Agartala Cross-Border 12.24 km Rail Link project** connects Bangladesh and Tripura.
 - It connects India's northeast to Bangladesh by rail for the first time.
 - It will also facilitate better connectivity between Bangladesh's Chattogram port and the northeast and boost trade and tourism.
- ✓ The **64.7-km Khulna-Mongla port railway line** connects Bangladesh's second-largest port to the country's rail network for the first time.
 - With this, **Mongla**, the second largest port of Bangladesh, gets connected with the broad-gauge railway network.
- ✓ The **Maitree super thermal power project**, built under an Indian concessional financing scheme loan of \$1.6 billion, is a **1,320 MW plant** located in the **Khulna division** of Bangladesh. Its **Unit II** was inaugurated recently.
 - It has been implemented by the **Bangladesh-India Friendship Power Company (Private) Limited (BIFPCL)**, which is a **50:50 Joint Venture** company between India's **NTPC Ltd** and **Bangladesh Power Development Board (BPDB)**.

11.3 INTERNATIONAL ORGANIZATION FOR MIGRATION

- ❖ A **Legal Identity and Rights-Based Return Management Conference** was organised by IOM at the **UN City in Copenhagen, Denmark**.
- ❖ The initiative was organised within the framework of IOM's **Global Programme Enhancing Readmission and Legal Identity Capacities (RELICA)**, launched in **2022**.
- ❖ It aimed to promote dialogue between countries of origin and destination for such people without legal identities.
- ❖ **About a billion** people lack legal identities and are invisible to states, limiting their access to services and restricting their mobility, forcing them to travel longer, more dangerous and irregular routes.

ABOUT IOM

- ❖ IOM is an intergovernmental organization that provides services and advice concerning migration to governments and migrants, including refugees, internally displaced persons, and migrant workers.
- ❖ It was established in **1951** as to help resettle people displaced by World War II.
- ❖ It was granted **Permanent Observer status to UN General Assembly** in **1992**.
- ❖ **HQ- Geneva, Switzerland**
- ❖ It has **175 member states** (including India) and presence in over **100 countries**.
- ❖ IOM works in four broad areas of migration management:
 - ✓ **Migration and development,**
 - ✓ **Facilitating migration,**
 - ✓ **Regulating migration and**
 - ✓ **Forced migration.**

11.4 OFFICE FOR THE COORDINATION OF HUMANITARIAN AFFAIRS

- ❖ The **Office for the Coordination of Humanitarian Affairs (OCHA)** under UN has launched an emergency aid appeal seeking **\$1.2 billion** to help some **2.7 million** people in **Gaza and the West Bank**.

ABOUT OCHA

- ❖ The United Nations **Office for the Coordination of Humanitarian Affairs (OCHA)** is a **United Nations (UN) body** established in **December 1991**.
- ❖ It is the **successor to the Office of the United Nations Disaster Relief Coordinator (UNDRO)**.
- ❖ It has **two headquarter locations**, **Geneva** and **New York**.
- ❖ OCHA is led by the **Under-Secretary-General for Humanitarian Affairs and Emergency Relief Coordinator (USG/ERC)**, who serves a **five-year term**.

- ❖ OCHA core functions include- **Advocacy, Coordination, Humanitarian Financing, Information Management and Policy.**
- ❖ OCHA's **Strategic Plan 2023-2026** outlines six transformational priorities to address the challenges of this rapidly changing landscape-
 - ✓ A **coherent humanitarian response** that is people centred, context specific, contributes to community resilience and promotes concrete protection outcomes.
 - ✓ **Systematic and predictable leadership** on access.
 - ✓ **Durable solutions to protracted internal displacement.**
 - ✓ **Humanitarian response** that is inclusive and leaves no one behind.
 - ✓ **Catalytic humanitarian financing** that delivers impact in people's lives.
 - ✓ **Strategic analysis of risks and trends** to adapt to an evolving landscape.

11.5 COMPREHENSIVE NUCLEAR-TEST-BAN-TREATY (CTBT)

- ❖ The Russian Defence Ministry recently confirmed that the **country's newest nuclear-powered submarine has successfully test-launched a ballistic missile.**
- ❖ This comes just days after Russian President Vladimir Putin revoked **Moscow's ratification of the Comprehensive Nuclear-Test-Ban-Treaty (CTBT)** — adopted by the **United Nations General Assembly in 1996 to prohibit all testing of nuclear weapons.**
- ❖ **This puts Russia in the same category as the USA, a signatory that is yet to ratify the agreement.**
- ❖ **Russia has, however, maintained that it will not conduct nuclear tests as long as the US does not conduct any.**
- ❖ **The US signed the CTBT on 24 September 1996 but is yet to ratify the agreement.**

ABOUT CTBT

- ❖ It **bans all nuclear explosions, whether for military or peaceful purposes.**
- ❖ It **seeks to establish CTBT Organization (CTBTO) to verify the ban worldwide.**
- ❖ It was **negotiated at the Conference on Disarmament in Geneva in 1994.**
- ❖ In **1996, the United Nations adopted the CTBT, which imposed a complete ban on nuclear weapons testing, closing the gaps left by previous treaties.**
- ❖ The CTBT **became available for signature in September 1996, signifying a major advancement in the global endeavour to halt nuclear testing across the world.**
- ❖ It has **been signed by 187 nations and ratified by 178.**
 - ✓ However, the **treaty cannot formally enter into force until it is ratified by 44 specific nations.**
 - ✓ **Eight of these nations have yet to ratify the treaty- China, India, Pakistan, North Korea, Israel, Iran, Egypt, United States.**
- ❖ **India's stand-**
 - ✓ India has **neither signed nor ratified the CTBT.**
 - ✓ It was a part of the negotiations in 1996, but **later withdrew before it was concluded.**
- ❖ **India calls for universal and complete nuclear disarmament in a time-bound manner**

11.6 TREATY OF CONVENTIONAL ARMED FORCES IN EUROPE

- ❖ NATO recently announced the **formal suspension of the treaty of Conventional Armed Forces in Europe** in response to **Russia's pullout from the treaty.**
- ❖ NATO said that **"a situation whereby Allied State Parties abide by the Treaty, while Russia does not, would be unsustainable".**
- ❖ **Signed in 1990, just a year after the fall of the Berlin Wall, the CFE set constraints on conventional arms and equipment.**
- ❖ Its purpose was to **stop Cold War rivals from building up forces that could be used in a swift assault.**
- ❖ It **established limitations on conventional arms and equipment with the primary goal of preventing Cold War adversaries from amassing forces suitable for rapid attacks.**

- ❖ It set **equal limits on the number of tanks, armored combat vehicles, heavy artillery, etc.** that **NATO and the Warsaw Treaty Organization** could **deploy between the Atlantic Ocean and Ural Mountains**.

11.7 ADMM+

- ❖ The **10th Association of South East Asian Nations (ASEAN) Defence Ministers' Meeting-Plus (ADMM-Plus)** was held in **Jakarta, Indonesia**.

ABOUT ASSOCIATION OF SOUTH EAST ASIAN NATIONS (ASEAN) DEFENCE MINISTERS' MEETING-PLUS

- ❖ The ADMM is the highest defence consultative and cooperative mechanism in ASEAN.
- ❖ ADMM-Plus is a platform comprising 10-nation ASEAN (Association of Southeast Asian Nations) and its eight dialogue partners -- India, China, Australia, Japan, New Zealand, Republic of Korea, Russia and the United States.
- ❖ India became the dialogue partner of the ASEAN in 1992 and the inaugural ADMM-Plus was convened in Hanoi, Vietnam on October 12, 2010.
- ❖ Since 2017, the ADMM-Plus Ministers have been meeting annually to bolster the cooperation amongst the ASEAN and the Plus countries.
- ❖ The ADMM-Plus progresses practical cooperation amongst member countries through seven Experts Working Groups (**EWGs**) namely - Maritime Security, Military Medicine, Cyber Security, Peacekeeping Operations, Counter Terrorism, Humanitarian Mine Action and Humanitarian Assistance & Disaster Relief (**HADR**).

11.8 INNOVATION HANDSHAKE

- ❖ A Memorandum of Understanding (MoU) on **"Enhancing Innovation Ecosystems through an Innovation Handshake"** under the **framework of India – U.S. Commercial Dialogue** was signed recently in San Francisco.
- ❖ The MoU is **signed with the objective to**
 - ✓ **connect the two sides' dynamic startup ecosystems,**
 - ✓ **address specific regulatory hurdles to cooperation,**
 - ✓ **share information and best practices for startup fundraising and**
 - ✓ **promote innovation and job growth, particularly in critical and emerging technologies (CET) as identified under India -U.S. initiative for Critical and Emerging Technology (iCET).**

11.9 PEDRO SANCHEZ IS SPANISH PM

- ❖ **Pedro Sanchez** won the **backing of Spain's parliament for second term as prime minister** recently.
- ❖ Sanchez, in office since 2018, **won the backing of 179 lawmakers, three more than the absolute majority of 176 in the 350-seat parliament** after an often tense two-day debate.

11.10 ASIA-PACIFIC ECONOMIC COOPERATION (APEC)

- ❖ **San Francisco**, recently, hosted the **Asia Pacific Economic Cooperation (APEC) Economic Leaders summit**.
- ❖ Its theme was **"Creating a Resilient and Sustainable Future for All"**.

ABOUT APEC

- ❖ APEC is a **regional economic forum** that was **established in 1989**.
- ❖ Its stated **aim** was to **"leverage the growing interdependence of the Asia-Pacific and create greater prosperity for the people of the region through regional economic integration"**.
- ❖ The **21 members of APEC** are termed **"economies"** (rather than countries or member states) because **trade and economic issues are the focus of the grouping**.

- ❖ The **1991 Seoul Declaration** marked the **establishment of a liberalized free trade area around the Pacific Rim as APEC's primary objective.**
- ❖ It operates on basis of **non-binding commitments with decisions reached by consensus.**
- ❖ The APEC economies are **Australia, Brunei, New Zealand, Papua New Guinea, Hong Kong (as part of China), the Philippines, Indonesia, Malaysia, Vietnam, Singapore, Thailand, Chinese Taipei (Taiwan), China, Japan, South Korea, Russia, Canada, the United States, Mexico, Peru, and Chile** – as located geographically around the Pacific Ocean.
 - ✓ India is **not a member** although it **made a formal request in 1991.**
- ❖ APEC economies, comprising **38% of global population**, account for **approximately 60 percent of global GDP** and **half of global trade.**

11.11 VOICE OF GLOBAL SOUTH SUMMIT(VOGSS)

- ❖ The **2nd Voice of Global South Summit** was hosted by India.
- ❖ It focused on **condemning the Hamas attacks of October 7** and **called for restraint, dialogue, and diplomacy to resolve the Israel-Hamas conflict.**
- ❖ PM of Indi unveiled **DAKSHIN (Global South Centre of Excellence)** and called for **5 'Cs' for the Global South- Consultation, Cooperation, Communication, Creativity, and Capacity building.**

ABOUT VOGSS

- ❖ The term '**global South**' was **first used by Carl Oglesky, a leftist American author and political activist in 1969.**
- ❖ Through his famous **1980 report** entitled '**North-South: A Programme for Survival**', former **West German Chancellor Willy Brandt** invented the '**Brandt Line**' that **divided the world roughly at the latitude of 30 degrees North**, placing **North America, Europe, Japan, and Australia in the North** and showing the southern part of the hemisphere as the **South.**
- ❖ **Voice of Global South Summit** is a platform where **countries from the Global South, often described as developing or less developed, come together to share perspectives and priorities.**
- ❖ The summit **focuses on sustaining momentum toward a more inclusive, representative, and progressive world order.**

11.12 NB-8 STATES

- ❖ **External Affairs Minister** recently stated that **India's engagement with the Nordic-Baltic Eight (NB8) nations has significantly strengthened in recent years**
- ❖ The focus has been on **establishing "appropriate institutional frameworks" to foster closer business-to-business cooperation with countries in the group.**

ABOUT NB8 STATES

- ❖ The **Nordic Baltic Eight (NB8)**, consists of-
 - ✓ **Denmark, Finland, Iceland, Norway, and Sweden (Nordic states)**
 - ✓ **Estonia, Latvia, Lithuania (Baltic states)**
- ❖ It was **established in 1992 to foster closer ties between the Nordic and Baltic countries.**
- ❖ Notably, the **NB8 countries collectively represent an economy of more than USD 2 trillion, with a population of about 33 million and a high standard of living.**
 - ✓ NB-8 also stands as an **innovation and technological powerhouse.**
 - ✓ NB8 countries are **global leaders in niche technologies** in the areas of **digitization, maritime solutions, port modernization, food processing, health & life-sciences, renewable energy, AI, agriculture, innovation and skill development, e-mobility, offshore wind, fuel-technologies, including green hydrogen and green methanol, ICT, life sciences, digitization and e-governance, cyber technologies and Green Shipping.**

11.13 WORLD'S LARGEST SINGLE-SITE SOLAR POWER PLANT

- ❖ The **United Arab Emirates (UAE)** has inaugurated the **world's largest single-site solar power plant, the 2-gigawatt (GW) Al Dhafra Solar Photovoltaic (PV) Independent Power Project (IPP)**.
- ❖ The plant, located **35 kilometers from Abu Dhabi city**, will generate enough electricity to power almost **200,000 homes**.
- ❖ It is **expected to displace 2.4 million tonnes of carbon emissions annually**.

11.14 GENERALISED SYSTEM OF PREFERENCES

- ❖ **India and Indonesia** were the **top two beneficiaries of the European Union's Generalised System of Preferences (GSP) schemes for exports in 2022**.
- ❖ **Clothing, machinery, and footwear** accounted for **nearly half of all standard GSP imports**, as per a joint report of the **EU to the European Parliament and the Council**.

ABOUT GSP SCHEME

- ❖ Under the GSP scheme, the **EU allows identified products originating in certain developing countries preferential access to its markets in the form of reduced or zero rates of customs duties**.
- ❖ As the **items become more competitive and reach a particular threshold, the GSP is withdrawn**.
 - ✓ The **EU has already withdrawn the GSP benefit from about 1,800 items from India in 2023, and the present policy will now continue for another four years until 2027**.
 - ✓ The **items include electrical machinery, plastics, articles of stone and articles of leather and could affect exports worth \$7.9 billion**.
- ❖ GSP was instituted under the aegis of **United Nations Conference on Trade and Development (UNCTAD)**.

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12. DAYS TO REMEMBER

12.1 WORLD VEGAN DAY- NOVEMBER 1ST

- ❖ **World Vegan Day** is celebrated every year on **November 1st**.
- ❖ On this day, **vegan organizations promote the environmental and health impacts of the vegan diet.**
- ❖ A vegan diet consists of **eliminating all animal products, including meat, eggs, poultry, and other items derived from animals.**
- ❖ World Vegan Day began on **November 1, 1994**, when 'The Vegan Society' was founded to encourage **veganism and a plant-based diet by a vegan animal rights activist Louise Wallis.**

12.2 INTERNATIONAL DAY FOR BIOSPHERE RESERVE- NOVEMBER 3RD

- ❖ **World Biosphere Reserve Day** is celebrated on **November 3** each year to raise awareness of the **importance of biosphere reserves** and to **promote their conservation and sustainable use.**
- ❖ In the **year 2022** at the **41st Session of UNESCO's general Conference**, it was decided that **November 3 would be celebrated worldwide as the International Day for Biosphere Reserves.**
- ❖ **Biosphere Reserves are protected areas**, meant for the **conservation of plants and animals.** Not just the flora and fauna, but **human beings also depend on these protected areas for their livelihood activities.**
- ❖ A **BR tries to balance economic and social development and maintenance of associated cultural values along with the preservation of nature.**
- ❖ **BRs are nominated by national governments and remain under the sovereign jurisdiction of the states where they are located.**
- ❖ These are **designated under the intergovernmental Man and the Biosphere (MAB) Programme by the Director-General of UNESCO** following the decisions of the **MAB International Coordinating Council (MAB ICC).**
- ❖ The **MAB Programme is an intergovernmental scientific programme that aims to establish a scientific basis for enhancing the relationship between people and their environments.**

STATS

- ❖ According to UNESCO, there are **currently 748 biosphere reserves across 134 countries**, including **22 transboundary sites, enhancing the friendly cooperation between neighbouring countries.**
- ❖ They impact the **lives of more than 250 million people in 134 countries; 12 sites can be found in India alone.**

12.3 INTERNATIONAL DAY FOR PREVENTING THE EXPLOITATION OF THE ENVIRONMENT IN WAR AND ARMED CONFLICT- NOVEMBER 6TH

- ❖ The International Day for Preventing the Exploitation of the Environment in War and Armed Conflict is a global day observed on **November 6th every year.**
- ❖ This day **highlights the impact of armed conflicts on our environment.**
- ❖ This day was **inaugurated by the United Nations (UN) on November 5, 2001, through a UN General Assembly resolution.**
- ❖ The major goals include-
 - ✓ **Environmental Safety During Conflict**
 - ✓ **Promoting Peace and Sustainability**
 - ✓ **International Collaboration**
 - ✓ **Safeguarding Human Well-being**
 - ✓ **Advocating Legal Frameworks**
 - ✓ **Raising Public Awareness**

12.4 WORLD RADIOGRAPHY DAY- NOVEMBER 8TH

- ❖ **World Radiography Day** is observed each year on **November 8** to commemorate the discovery of x-radiation by **Wilhelm Conrad Roentgen** in **1895**.
- ❖ On **November 8, 1895**, German physicist **Wilhelm Conrad Roentgen** made a groundbreaking discovery.
- ❖ This day is **dedicated to honouring the field of radiography**, acknowledging the **crucial contributions of radiographers**, and **emphasizing the importance of medical imaging in contemporary healthcare**.
- ❖ The **theme** chosen for **World Radiography Day 2023** is **"Celebrating Patient Safety."**

12.5 WORLD SCIENCE DAY FOR PEACE AND DEVELOPMENT- NOVEMBER 10TH

- ❖ The **World Science Day for Peace and Development** is celebrated **annually on November 10th**.
- ❖ It is a **day to acknowledge the role of science in society** and **highlights the significant role of involving the public in debates** surrounding the **effects of new scientific innovations** and to **create awareness among people**.
- ❖ The theme for 2023 is **Building Trust in Science**.
- ❖ The **origin of World Science Day for Peace and Development** is linked to the positive outcomes that emanated from the **1999 World Conference on Science in Budapest, Hungary**.
- ❖ These **achievements** led **UNESCO** to **formally declare the celebration of this day in 2001**.

12.6 NATIONAL EDUCATION DAY – NOVEMBER 11TH

- ❖ National Education Day is **celebrated every year on November 11** across **India** to mark the **birth anniversary of Maulana Abul Kalam Azad** who was the **first education minister of independent India**.
- ❖ The National Education Day **2023** theme is **"Embracing Innovation."**

ABOUT MAULANA AZAD

- ❖ **Abul Kalam Ghulam Muhiyuddin Ahmed bin Khairuddin Al-Hussaini Azad** was **born on November 18, 1888**.
- ❖ He was a **freedom fighter, educationist, scholar and senior leader of the Indian National Congress**.
- ❖ Also called **Maulana Azad**, he was a **key architect of Independent India**.
- ❖ He was **responsible for setting up the top education bodies** including the **All India Council for Technical Education (AICTE)** and the **University Grants Commission (UGC)**.
- ❖ **Maulana Abul Kalam Azad** also **established the first Indian Institute of Technology – IIT Kharagpur**.
- ❖ The **Indian Council for Cultural Relations (ICCR), Sahitya Academy, Lalit Kala Academy, Sangeet Natak Academy and Council of Scientific and Industrial Research (CSIR)** were also set up under his guidance.
- ❖ He served as the **education minister from August 15, 1947 to February 2, 1958** and passed away in **Delhi on February 22, 1958**.
- ❖ The **Ministry of Human Resource Development (HRD)** had announced on **September 11, 2008** about observing the day as **National Education Day** across the country.
- ❖ **Maulana Azad** was **posthumously awarded India's highest civilian award, the Bharat Ratna in 1992**.

12.7 WORLD KINDNESS DAY - NOVEMBER 13TH

- ❖ **World Kindness Day** is **observed globally to promote and celebrate acts of kindness** on **November 13th**.
- ❖ The **theme for the year 2023** is a powerful reminder – **"Be Kind Wherever Possible."**
- ❖ The theme **underscores the importance of kindness as a universal principle** that should be practiced in every corner of the globe and in every aspect of our lives.
- ❖ **World Kindness Day** was **first introduced by the World Kindness Movement (WKM) back in 1998**.

12.8 WORLD KINDNESS DAY - NOVEMBER 13TH

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12.9 WORLD DIABETES DAY – NOVEMBER 14TH

- ❖ World Diabetes Day, observed on **November 14th**, aims to **raise global awareness about diabetes.**
- ❖ World Diabetes Day (WDD) was created in 1991 by **International Diabetes Federation** and the **World Health Organization** in response to **growing concerns about the escalating health threat** posed by diabetes.
- ❖ **World Diabetes Day** became an official **United Nations Day in 2006** with the **passage of United Nation Resolution 61/225.**
- ❖ The theme for World Diabetes Day 2023 is **“Access to Diabetes Care”.**

12.10 WORLD PHILOSOPHY DAY- NOVEMBER 16TH

- ❖ **World Philosophy Day 2023** celebrated on **16th November.**
- ❖ Celebrated on the **third Thursday of November every year**, **World Philosophy Day** is a **UNESCO initiative to highlight the importance of the discipline.**
- ❖ **UNESCO first created World Philosophy Day in 2002**, when it was celebrated on the **21 November.** **UNESCO encourages its partners (from governments to schools) to engage with philosophy** on the day through activities that encourage **“free, reasoned and informed thinking on the major challenges of our time.”**
- ❖ The **theme** for World Philosophy Day 2023 is **“Philosophical Reflection in a Multicultural World”.**

12.11 NATIONAL PRESS DAY- NOVEMBER 16TH

- ❖ **The Press Council of India** observes **National Press Day on 16th November every year.**
- ❖ This day is **celebrated to honour the formation of the Press Council of India in 1966** which acts as a **regulatory body for the news media in the country.**
- ❖ The Press Council of India is a **statutory body** which was established to **ensure the freedom of the press and to maintain and improve the standards of journalism.**
- ❖ The **quasi-judicial body** was **re-established in the year 1979** under the **Press Council Act, 1978.**
- ❖ The **theme** for **National Press Day 2023** is **“Media in the Era of Artificial Intelligence”.**

12.12 NATIONAL EPILEPSY DAY- NOVEMBER 17TH

- ❖ **National Epilepsy Day** is celebrated every year in India on **November 17th** to raise awareness around the brain disorder and bust myths surrounding the disease.
- ❖ **Epilepsy** is a **brain disorder that can cause seizures due to abnormal brain activity or temporary changes in the brain's electrical functioning.**
- ❖ The brain **continuously generates tiny electrical impulses in an orderly pattern** that travel along the network of nerve cells in the brain.
- ❖ **In epilepsy, these electrical rhythms become imbalanced, and the normal electrical pattern is disrupted by sudden and synchronized bursts of electrical energy** that may briefly affect their consciousness, movements or sensations.
- ❖ According to WHO, **around 50 million people worldwide are affected by epilepsy and India accounts for nearly 10-20 percent (5-10 million) of the global burden of epilepsy.**

12.13 INTERNATIONAL MEN'S DAY- NOVEMBER 19TH

- ❖ International Men's Day is observed annually on **19th November**.
- ❖ The **theme for International Men's Day 2023** is "Zero Male Suicide"
- ❖ It underscores the **need to address mental health issues among men and boys**.

12.14 WORLD CHILDREN'S DAY- NOVEMBER 20TH

- ❖ The celebration of 'World Children's Day' on **November 20th** serves as a way to promote children's welfare and international togetherness across the world.
- ❖ The **UN General Assembly** adopted the Declaration of the Rights of the Child on **November 20, 1959**, and later, on the **same day in 1989**, the **Convention on the Rights of the Child**.
- ❖ The **day was first observed** as **Universal Children's Day** in **1954**.
- ❖ The **theme for World Children's Day 2023** is "For every child, every right".

12.15 INTERNATIONAL DAY FOR THE ELIMINATION OF VIOLENCE AGAINST WOMEN- NOVEMBER 25TH

- ❖ International Day for the Elimination of Violence against Women is **celebrated on November 25th** to create awareness of the different types of violence faced by women at different stages in life.
- ❖ Since **1981**, women's rights activists have been celebrating International Day for the Elimination of Violence against Women on **25 November**.
- ❖ The **theme for International Day for the Elimination of Violence against Women 2023** is "UNITE! Invest to prevent violence against women and girls".

12.16 SAMVIDHAN DIWAS

- ❖ India celebrates **Constitution Day or Samvidhan Diwas** on **November 26th**.
- ❖ Earlier, this day was celebrated as **Law Day** but in **2015** the Indian government modified **Law Day** as **Constitution Day**.
- ❖ **November 26** marks the day when India adopted its constitution in the year **1949**.
- ❖ The **Constitution** came into force on **January 26, 1950**.
- ❖ **BR Ambedkar**, known for championing the cause of the downtrodden, was the head of the committee that **finalised the draft of the Indian Constitution**.
- ❖ The **completion of the draft** had taken **2 years, 11 months and 17 days**.

12.17 WORLD SUSTAINABLE TRANSPORT DAY- NOVEMBER 26TH

- ❖ **26th November 2023**, marks the **first United Nations World Sustainable Transport Day**, a day created in response to the impact that transport has on climate change, as well as the disparity between transport options around the world.
- ❖ **World Sustainable Transport Day 2023** focuses on the theme "Sustainable transport, sustainable development".
- ❖ The **transport sector** is responsible for approximately one quarter of all greenhouse gas emissions. **Ninety-one percent** of the energy used in motorized transport on land, sea and air is derived from fossil fuels.

12.18 NATIONAL MILK DAY- NOVEMBER 26TH

- ❖ In **2014**, **NDDDB, IDA** and **22 state-level milk federations** decided to **dedicate November 26** to **Dr Verghese Kurien**, the **Father of India's White Revolution**.

- ❖ Hence, together they initiated the observance of National Milk Day on November 26th.
- ❖ In the early 1970s, the National Dairy Development Board (NDDB) launched Operation Flood, a transformative national project aimed at establishing a comprehensive milk grid across the country.
- ❖ At the helm of the NDDB was Dr. Verghese Kurien, whose leadership injected essential management skills into the cooperative sector.
- ❖ It catapulted milk production in India and now the country ranks first in milk production in the world contributing 24% of global milk production

12.19 INTERNATIONAL DAY OF SOLIDARITY WITH THE PALESTINIAN PEOPLE – NOVEMBER 29TH

- ❖ International Day of Solidarity with the Palestinian People is observed on November 29th.
- ❖ In 1977, the UN General Assembly called for the annual observance of 29 November as the International Day of Solidarity with the Palestinian People.
 - ✓ On that day, in 1947, the Assembly adopted the resolution on the partition of Palestine.
- ❖ "The resolution on the observance of the International Day of Solidarity with the Palestinian People also encourages Member States to continue to give the widest support and publicity to the observance of the Day of Solidarity." UN official statement reads.

13. PLACES IN NEWS

13.1 BEN GURION CANAL

- ❖ The current Israel-Palestine crisis in the Middle East has refocused attention on the ambitious Ben Gurion Canal Project.
- ❖ The idea is to cut a canal through the Israeli-controlled Negev Desert from the tip of the Gulf of Aqaba — the eastern arm of the Red Sea that juts into Israel's southern tip and south-western Jordan — to the Eastern Mediterranean coast
- ❖ It will create an alternative to the Egyptian-controlled Suez Canal that starts from the western arm of the Red Sea and passes to the southeastern Mediterranean through the northern Sinai peninsula.
- ❖ This so-called Ben Gurion Canal Project, which was first envisioned in the 1960s would, if it were to be actually completed, transform global maritime dynamics by taking away Egypt's monopoly over the shortest route between Europe and Asia.

13.2 SACHIDANANDA SINHA

- ❖ A life-size statue of Sachchidananda Sinha was inaugurated by Bihar Chief Minister in Patna on the occasion of his birth anniversary.
- ❖ He donned multiple hats during his illustrious career as a barrister, a lawmaker, journalist and university administrator.

ABOUT SACHCHIDANANDA SINHA

- ❖ He was born in Arrah, in erstwhile Bengal Presidency on 10th November, 1871.
- ❖ He was an active member of British Committee on Indian National Congress in London.
- ❖ He was at the forefront of a movement that eventually led to the creation of a separate province of Bihar and Orissa (now Odisha) in 1912 with Patna as its capital.
- ❖ From 1910 until 1920, he served on the Imperial Legislative Council and the Indian Legislative Assembly.
- ❖ He was the first Indian to be appointed as a Finance Member of a province.
- ❖ He also served as the provisional president of the Constituent Assembly before Rajendra Prasad was formally appointed as President.

- ❖ He also held the position of **Speaker in the Bihar and Orissa Legislative Councils.**
- ❖ He was **one of the Vice-Chancellors** of Patna **University from 1936 to 1944.**

14. AWARDS AND HONOURS

14.1 CHAMPIONS OF THE EARTH 2023

- ❖ **The United Nations Environment Programme (UNEP) announced a city mayor, a non-profit foundation, a social enterprise, a government initiative and a research council as its 2023 Champions of the Earth.**
- ❖ The winners include-

Winner	Category	Initiative
Josefina Belmonte Belmonte, mayor of Quezon City in the Philippines	Policy Leadership	includes bans on single-use plastics, a trade-in programme for plastic pollution, refill stations for everyday essentials and advocacy for strong global policymaking on plastics
UK-based Ellen MacArthur Foundation	Inspiration and Action	mainstreaming a lifecycle approach for plastics
China's Blue Circle	Entrepreneurial Vision	China's largest marine plastic waste programme using blockchain technology and the internet of things to track and monitor the full lifecycle of plastic pollution
José Manuel Moller of Chile	Entrepreneurial Vision	founder of Algramo, a social enterprise dedicated to providing refill services that reduce plastic pollution
Council for Scientific and Industrial Research of South Africa	Science and Innovation	uses cutting-edge technology and multidisciplinary research to develop innovations to tackle plastic pollution

PLASTIC POLLUTION MENACE

- ❖ Humanity **produces around 430 million tonnes of plastic every year, two-thirds** of which quickly becomes **waste.**
- ❖ Every year, **up to 23 million tonnes of plastic waste leaks into aquatic ecosystems, polluting lakes, rivers and seas.**
- ❖ **By 2040, carbon emissions associated with the production, use and disposal of conventional fossil fuel-based plastics could account for nearly one-fifth of global greenhouse gas emissions** under the most ambitious targets of the Paris climate change agreement.
- ❖ **Chemicals in plastic can also cause health problems in humans.**

ABOUT THE AWARD

- ❖ The **annual Champions of the Earth award** is the **UN's highest environmental honour.**
- ❖ It has **recognised 116 laureates: 27 world leaders, 70 individuals and 19 organisations** since its inception in **2005.**

14.2 NANDINI DAS WINS 2023 BRITISH ACADEMY BOOK PRIZE

- ❖ India-born author **Nandini Das** has been named the winner of the **2023 British Academy Book Prize for Global Cultural Understanding**.
- ❖ It is a **leading international non-fiction prize worth GBP 25,000**
- ❖ She was awarded for her book **'Courting India: England, Mughal India and the Origins of Empire'**.
- ❖ The work, hailed as the **"true origin story of Britain and India told through England's first diplomatic mission to the Mughal courts,"** secured the **top spot this year at a ceremony held at the British Academy in London**.

14.3 INDIRA GANDHI PRIZE FOR PEACE, DISARMAMENT AND DEVELOPMENT 2022

- ❖ The **Indira Gandhi Prize for Peace, Disarmament and Development 2022** was, **jointly awarded** to the **Indian Medical Association** and the **Trained Nurses Association of India** as representatives of the **COVID-19 warriors in the country**.

ABOUT THE PRIZE

- ❖ The **Indira Gandhi Prize for Peace, Disarmament and Development** was instituted in the memory of the **former prime minister by a trust in her name in 1986**.
- ❖ It consists of a **monetary award of Rs 25 lakh along with a citation**.
- ❖ It is **given to individuals or organizations** who work towards **ensuring international peace and development, ensuring that scientific discoveries are used to further the scope of freedom and better humanity, and creating a new international economic order**.

14.4 MISS UNIVERSE 2023

- ❖ **Sheynnis Palcios**, from **Nicaragua**, was crowned **Miss Universe 2023**.
- ❖ The **72nd Miss Universe event** was held in **San Salvador, El Salvador**.
- ❖ The **23-year-old TV host and model**, is **the first Nicaraguan woman to win the crown**.
- ❖ **Anntonia Porslid of Thailand** was **first runner-up** while **Australia's Moraya Wilson** was crowned the **second runner-up**.

14.5 BOOKER PRIZE 2023

- ❖ **Paul Lynch**, an **Irish author** won the **2023 Booker prize** for his **fifth novel 'Prophet Song.'**
 - ✓ The story is **set in an imagined Ireland that is descending into tyranny**.
 - ✓ It was described as a **"soul-shattering and true" novel that "captures the social and political anxieties of our current moment"**.
- ❖ **Lynch** is the **fifth Irish author to win the prize** while the **last Irish writer Anna Burns** won the award in **2018**.
- ❖ **Booker Prize** is **awarded to the best novel of fiction written in English and published in UK and Ireland**.

15. SPORTS

15.1 BALLON D'OR 2023

- ❖ Lionel Messi secured his **eighth Ballon d'Or**, a record in football history, and Aitana Bonmati claimed the **Ballon d'Or Féminin Award** for her exceptional contributions to **Spain's Women's World Cup win and Barcelona's success**.

ABOUT THE AWARD

- ❖ The **Ballon d'Or** is an annual football award presented by French news magazine France Football since 1956.
- ❖ The Ballon d'Or awards are based on a player's individual performance in the previous season.
- ❖ Previously players were adjudged based on performance during the calendar year.

15.2 PRE-WORLD CUP PARAGLIDING TOURNEY

- ❖ Pre-World Cup paragliding championship, which was organised at Bir Billing, concluded recently.
- ❖ As many as **93 participants from 18 countries participated** in the championship.
- ❖ There were **13 participants from the Indian Army, including 8 women**.

RESULTS

- ❖ Overall, America's Austin Cox stood first, America's Owen Shoe Menker stood second and France's Cotton Lamy bagged the third position.
- ❖ In the **junior category**, Ashwani Thakur of India stood first while Sushant Thakur stood second and Noah Kanner of Switzerland bagged the third position.
- ❖ In the **sports category**, Owen Schumacher bagged the first position, Subir Sidhu stood second and Christopher Moody third.
- ❖ In the **senior category**, Switzerland's Michael Sewri won the first place, Noah Kinnar stood second and Veera Shivari bagged the third position.
- ❖ In the **team category**, Northwest Paragliding team stood first, The First Frog team won the second place while Akash Adventure team bagged the third place.
- ❖ In the **Indian category**, Ashwani Thakur stood first, Yash Paul stood second and Ranjit Singh third.
- ❖ In the **women's category**, America's Jenny Onal bagged the first place, Switzerland's Veer Shevari stood second and Isabelle Messenger third.

15.3 FIRST CRICKETER TO BE TIMED OUT

- ❖ In the **Cricket World Cup 2023 match** between **Bangladesh and Sri Lanka**, Sri Lankan batsmen **ngelo Mathews** became the **first player to be timed out in an international cricket match**.
- ❖ Specifically, **section 40.1.1** of the playing conditions by ICC states: **"After the fall of a wicket or the retirement of a batter, the incoming batter must, unless Time has been called, be ready to receive the ball, or for the other batter to be ready to receive the next ball within 2 minutes of the dismissal or retirement. If this requirement is not met, the incoming batter will be out, Timed out."**

15.4 MAX VERSTAPPEN WINS BRAZILIAN GRAND PRIX 2023

- ❖ Three-time champion **Max Verstappen led from the start and won the Brazilian Grand Prix**.
- ❖ Verstappen earned his record-breaking **17th win**.
- ❖ **Lando Norris came in second while Fernando Alonso finished third**.

15.5 AUSTRALIA IS WORLD CUP CHAMPION

- ❖ Australia won the ICC Cricket World Cup 2023 final defeating India with a convincing 6-wicket margin.
- ❖ With this win Australia has won the World Cup title 6 times - 1987, 1999, 2003, 2007, 2015 and 2023.
- ❖ Some statistics
 - ✓ Player of the Final: Travis Head (137 runs)
 - ✓ Player of the Tournament: Virat Kohli (765 runs and one wicket)
 - ✓ Most runs: Virat Kohli (765 runs in 11 matches)
 - ✓ Most wickets: Mohammed Shami (24 wickets)
 - ✓ Most hundreds: Quinton de Kock (Four centuries)
 - ✓ Highest score: Glenn Maxwell (201* against Afghanistan)

15.6 PANKAJ ADVANI WINS WORLD BILLIARDS CHAMPIONSHIP

- ❖ Indian cueist Pankaj Advani rallied to win the IBSF (the International Billiards and Snooker Federation) World Billiards Championship title for a staggering 26th time, beating compatriot Sourav Kothari in the final.
- ✓ Advani won his first world title in 2003.

15.7 LAS VEGAS GRAND PRIX

- ❖ Max Verstappen, from team Red Bull won the Las Vegas Grand Prix.
- ❖ Ferrari driver Charles Leclerc came in second and his Red Bull teammate Sergio Perez finished third.

16. PERSON IN NEWS

16.1 GIEVE PATEL

- ❖ Renowned playwright, poet, painter, physician and thinker Gieve Patel passed away recently. He was 83.
- ❖ Born in Mumbai, Gieve Patel was a graduate of Grant Government Medical College.
- ❖ He rose to prominence in the world of arts and literature through his notable contributions as a playwright, poet, and painter.
- ❖ Literary contributions
 - ✓ Poems - How Do You Withstand, Body, Mirrored Mirroring and On Killing a Tree.
 - ✓ Plays - Princes, Savaksa and Mr. Behram

16.2 SIR CHANDRASEKHARA VENKATA RAMAN

- ❖ November 7th, 2023, marks the 135th birth anniversary of the renowned Indian physicist, Sir Chandrasekhar Venkata Raman, popularly known as C.V. Raman.

ABOUT C V RAMAN

- ❖ Born on November 7th, 1888, in Tiruchirappalli.
- ❖ His journey in academia began at Presidency College, Madras, where he passed his B.A. examination in 1904 with flying colors, securing the first place and the gold medal in physics.
- ❖ Raman's pioneering research focused on the scattering of light, a phenomenon that occurs when a beam of light is deflected by molecules.
- ❖ His discovery, known as the Raman Effect, revealed that a small fraction of the scattered light acquires different wavelengths than that of the original light.

- ❖ The Raman Effect has since been applied with great success in various fields of molecular physics and has effectively helped to check the symmetry properties of molecules, thus addressing problems concerning nuclear spin in atomic physics.
- ❖ He was awarded the prestigious Nobel Prize in Physics in 1930 for his groundbreaking work on the scattering of light and the discovery of the effect named after him, the Raman Effect.
 - ✓ Raman became the first Asian to receive a Nobel Prize in any branch of science.
 - ✓ Dr. C.V. Raman was awarded the Bharat Ratna by the Government of India in 1954.
- ❖ He was elected a Fellow of the Royal Society early in his career in 1924, and was knighted in 1929.
- ❖ He sponsored the establishment of the Indian Academy of Sciences and served as its President since its inception.
- ❖ After retiring from IISc in 1948, CV Raman established the Raman Research Institute in Bengaluru in 1949.
 - ✓ He served as the director and remained active in the institute until his passing in 1970.

16.3

1.1. J B KRIPLANI

- ❖ The Prime Minister paid homage to socialist stalwart Acharya JB Kripalani on his birth anniversary (11th November).
- ❖ He was an independence activist, Indian politician and an Educationist.

ABOUT J B KRIPLANI

- ❖ Full name- Jivatram Bhagwandas (J.B.) Kripalani
- ❖ Born on 11th November 1888 in Hyderabad, Sindh.
- ❖ He accompanied Mahatma Gandhiji in his campaign in Champaran movement.
- ❖ He was part of the Non-Cooperation Movement (1920-22) and the Civil Disobedience movement and Quit India Movement (1942).
- ❖ He earned the moniker 'Acharya' around 1922 when he was teaching at the Gujarat Vidyapith(which was founded by the Mahatma Gandhi)
- ❖ He was the President of Indian National Congress (INC) at the time of independence.
- ❖ He served in the Interim government of India (1946-1947).
- ❖ He was the Chairman of Fundamental Rights subcommittee in the Constituent Assembly of India.
- ❖ He was the founder of the Praja Socialist Party (PSP).
- ❖ He moved the first-ever No confidence motion in Lok Sabha in 1963, immediately after the India-China War (1962).

16.4

BIRSA MUNDA

- ❖ 'Janjatiya Gaurav Diwas' on November 15th is celebrated in the memory of Birsa Munda, an Indian tribal Independence activist and a folk hero belonging to the Munda tribe of Jharkhand.

ABOUT BIRSA MUNDA

- ❖ He was a folk hero and a tribal freedom fighter hailing from the Munda tribe.
- ❖ He was born on November 15, 1875, in Ulihatu, near Ranchi.
- ❖ He spearheaded an Indian tribal mass movement that arose in the Bihar and Jharkhand belts in the early 19th century under British colonisation.
- ❖ Munda rallied the tribals to fight against the forceful land grabbing carried out by the British government, which would turn the tribals into bonded labourers and force them to abject poverty.
- ❖ As a reaction to the introduction of the Zamindari system, or Permanent settlement in tribal areas, Birsa Munda in 1894 declared "Ulgulan", or revolt, against the British and the Dikus – the outsiders.
 - ✓ It was aimed at destroying the tribal "Khuntkatti" agrarian system.
 - ✓ Khuntkatti means the joint holding of land by tribals.
- ❖ He created a faith called 'Birsait' and protested against conversion of tribals to Christianity.
- ❖ He was also known as 'Dharti Abba' or the Earth Father

- ❖ He died on June 9, 1900, at the **young age of 25**.
- ❖ **Jharkhand state** was created on his birth anniversary in 2000.

16.5 N GOSWAMY PASSES AWAY

- ❖ **Indian art historian** and a world authority on miniature paintings, **Brijinder Nath Goswamy** passed away recently at the age of 90.
- ❖ Born in **August 1933**, the **Padma Shri and Padma Bhushan** awardee **BNG**, as he was lovingly known in art circles, often called himself an **“accidental art historian”**.
- ❖ He was best known for his **path-breaking work on the Pahari style of paintings**
- ❖ He **authored more than 26 books**.

16.6 JUSTICE FATIMA BEEVI

- ❖ **Justice Fathima Beevi** passed away at a hospital in Kollam aged 96.

ABOUT JUSTICE FATHIMA BEEVI

- ❖ Fathima Beevi was born to **Annaveetil Meeran Sahib and Khadeeja Beevi of Pathanamthitta in 1927**.
- ❖ She completed her schooling at the **Catholicate High School** and did an undergraduate degree in **Chemistry from the University College, Thiruvananthapuram**.
- ❖ She enrolled as lawyer in November 1950.
- ❖ She was the **first student to complete a degree in law with full marks in all subjects**.
- ❖ She emerged **first in a competitive exam conducted by the Public Service Commission in 1958** and joined the **judicial services as a munsiff**.
- ❖ Years later, she became the **first woman member of the country’s Income Tax Appellate Tribunal**.
- ❖ She was **appointed as a high court judge in 1984** where she continued till 1989.
- ❖ She was **appointed as a judge in Supreme Court in 1989**, a post which she held till 1992.
- ❖ She was the **first woman in Asia to be appointed as a judge in her country’s apex court**.
- ❖ After her retirement from SC, Beevi was **appointed as Tamil Nadu governor in 1997**.

17. SOCIAL ISSUES, HEALTH, EDUCATION

17.1 ZIKA VIRUS

- ❖ In the backdrop of **Zika virus being detected in a mosquito pool collected from the Talakayalabetta village in Chikkaballapura district**, the **Karnataka Health Department** directed the **district authorities to step up surveillance measures**.

ABOUT ZIKA VIRUS

- ❖ **Zika virus is a mosquito-borne flavivirus** that was **first identified in Uganda in 1947 in Rhesus macaque monkeys**.
- ❖ The virus is spread by **Aedes mosquitoes**, the **same vector of Dengue and Chikungunya**.
 - ✓ It usually bites during the day.
- ❖ **Symptoms** include **rashes, fever, conjunctivitis, muscle and joint pain, malaise and headache**.
- ❖ **Zika virus infection during pregnancy** can cause infants to be born with **microcephaly (smaller than normal head size)** and other congenital malformations, known as **congenital Zika syndrome**.

In **Guillain-Barré syndrome**, a patient starts with **weakness and tingling in the feet and legs** that spread to the upper body which can also lead to **paralysis**.

- ❖ Zika virus infection can also cause neuropathy and myelitis, particularly in adults and older children.
- ❖ In outbreaks over the last decade, Zika virus infection was found to be associated with increased incidence of Guillain-Barré syndrome.
- ❖ Currently, there is no vaccine or specific treatment available for this infection.
 - ✓ Therefore, treatment is symptomatic and suspected / confirmed cases should remain isolated and take sufficient rest, consume a lot of liquids and sleep under the mosquito nets.

17.2 GLOBAL ONCHOCERCIASIS NETWORK FOR ELIMINATION (GONE)

- ❖ More than 150 onchocerciasis partners, including national onchocerciasis coordinators from health ministries in endemic countries, national onchocerciasis elimination committee chairs, experts, researchers gathered in Mbour, Senegal, for the first meeting of the new Global Onchocerciasis Elimination Network (GONE).

ABOUT ONCHOCERCIASIS

- ❖ Onchocerciasis (also known as river blindness) is the second leading infectious cause of blindness after trachoma.
- ❖ It is classified as a neglected tropical disease (NTD).
- ❖ It can cause intense itching, rashes, skin discoloration, visual impairment and eye disease leading to permanent blindness.
- ❖ The parasite worm *Onchocerca volvulus*, is spread by the bites of infected black flies that breed in rapidly flowing rivers.
- ❖ Globally, at least 244 million people in 31 countries suffer from this debilitating and painful disease.
- ❖ Africa is home to 99% of the people at risk of onchocerciasis; the remaining 1% live on the border between Brazil and Venezuela.
- ❖ Four countries have been verified by the World Health Organization (WHO) for eliminating transmission of the disease: Colombia, Ecuador, Guatemala and Mexico.

17.3 HELICOBACTER PYLORI (H. PYLORI) BACTERIA

- ❖ A two-step PCR-based assay of a small region of the *Helicobacter pylori* (H. pylori) bacteria can help detect H. pylori infection and also identify clarithromycin-resistant bacteria and those that are drug-sensitive in six-seven hours has been developed by a team of researchers from the National Institute of Cholera and Enteric Diseases (ICMR-NICED), Kolkata.
- ❖ Presently, as it takes three-four weeks to culture the bacteria and carry out drug-sensitivity tests, drug-resistant studies of H. pylori are rarely carried out.

ABOUT THE INFECTION

- ❖ In India, H. pylori infections affect 60-70% of the population.
- ❖ Most of the infections caused by the bacterium H. pylori are asymptomatic, but 10–15% of them develop peptic ulcer disorders or stomach cancer.
- ❖ Thus H. pylori infection is one of the robust known risk factors for gastric cancer.
- ❖ H. pylori infection is often acquired during childhood and remains in the stomach throughout life if not treated with antibiotics effectively.
- ❖ So, if someone suffers from gastroduodenal diseases along with the detection of H. pylori infection, eradication of the bacteria provides the most effective treatment.

17.4 PAURADHWANI PROGRAMME

- ❖ 'Pauradhwani', a programme organised by the Kerala State Literacy Mission (KSLM) in coastal and tribal-dominated areas in eight districts with the aim of shaping informed and independent citizens.

- ❖ The programme aims at instilling scientific aptitude, independent thinking, secularism, democratic spirit, constitutional values, and awareness about rights towards shaping independent citizens.
- ❖ 'Pauradhwani' has drawn up a six-point motto, which includes ensuring the rights of the marginalised sections, strengthening democracy and brotherhood, and building an egalitarian new Kerala society without any discrimination.

17.5 FDA APPROVES FIRST CHIKUNGUNYA VACCINE

- ❖ The U.S. Food and Drug Administration recently approved Ixchiq, the world's first chikungunya vaccine.
- ❖ Ixchiq is approved for individuals 18 years of age and older who are at increased risk of exposure to chikungunya virus.
- ❖ Ixchiq is administered as a single dose by injection into the muscle.
- ❖ It contains a live, weakened version of the chikungunya virus and may cause symptoms in the vaccine recipient similar to those experienced by people who have chikungunya disease.

ABOUT CHIKUNGUNYA

- ❖ Chikungunya is an emerging global health threat with at least 5 million cases of chikungunya virus infection reported during the past 15 years.
- ❖ It was first identified in Tanzania in 1952.
- ❖ The chikungunya virus is primarily transmitted to people through the bite of an infected Aedes mosquito.
- ❖ Transmission of chikungunya virus to newborn babies from pregnant individuals with viremia (virus present in the blood) at delivery has been reported and can cause severe, potentially fatal chikungunya virus disease in newborns.
- ❖ The highest risk of infection is in tropical and subtropical regions of Africa, Southeast Asia, and parts of the Americas where chikungunya virus-carrying mosquitos are endemic.
 - ✓ However, chikungunya virus has spread to new geographical areas causing a rise in global prevalence of the disease.
- ❖ The most common symptoms of chikungunya include fever and joint pain. Other symptoms may include a rash, headache, and muscle pain.
- ❖ Some individuals may experience debilitating joint pain that persists for months or even years.
- ❖ Treatment includes rest, fluids, and over-the-counter medications for pain and fever.

17.6 THALIDOMIDE TRAGEDY

- ❖ Australia will issue a national apology to all citizens affected by the "Thalidomide tragedy", more than half a century after babies were born with birth defects when mothers took the morning sickness pill.
- ❖ Thalidomide was the active ingredient in a sedative widely distributed to many mothers in Australia and around the world in the early 1960s.
- ❖ It was found to cause malformation of limbs, facial features and internal organs in unborn children.
- ❖ Thalidomide, developed by the German firm Gruenenthal, killed an estimated 80,000 children around the world before they were born, and 20,000 more were born with defects.

17.7 NATIONAL HEALTH CLAIM EXCHANGE

- ❖ The National Health Authority (NHA) and the Insurance Regulatory and Development Authority of India (IRDAI) have joined hands to operationalize the National Health Claim Exchange (NHCX)
- ❖ NHCX is a digital health claims platform developed by National Health Authority.
- ❖ It is being undertaken in the context of a circular issued by IRDAI in June 2023, whereby the insurance regulator had advised all insurers and providers to onboard the NHCX.
- ❖ The NHCX will serve as a gateway for exchanging claims-related information among various stakeholders in the healthcare and health insurance ecosystem.

- ❖ The integration with NHCX would enable seamless interoperability of health claims processing, enhancing efficiency and transparency in the insurance industry and benefiting the policyholders and patients.

ABOUT NHA

- ❖ The National Health Authority or the NHA is responsible for implementing India's flagship public health insurance/assurance scheme Ayushman Bharat Pradhan Mantri Jan Arogya Yojana.
- ❖ NHA has been set-up to implement the PM-JAY at the national level.
- ❖ It is an autonomous entity established in 2019 under the Society Registration Act, 1860.
- ❖ It oversees the design, technological infrastructure, and implementation of the "National Digital Health Mission" to create a National Digital Health Eco-system.
- ❖ It replaced the National Health Agency and operates as an attached office of the Ministry of Health and Family Welfare.

ABOUT IRDAI

- ❖ The Insurance Regulatory and Development Authority of India is a statutory body established under the IRDA Act 1999.
- ❖ It is under the jurisdiction of the Ministry of Finance.
- ❖ It is tasked with regulating and licensing the insurance and re-insurance industries in India.
- ❖ HQ- Hyderabad
- ❖ It is a 10-member body- a Chairman, five full-time members, and four part-time members appointed by the Government of India.

17.8 NATIONAL ORGAN AND TISSUE TRANSPLANT ORGANISATION (NOTTO)

- ❖ Four out of five organ recipients in India between 1995 and 2021 were men, according to data collated by the National Organ and Tissue Transplant Organisation (NOTTO) — numbers which indicate the prevailing gender disparity among those seeking healthcare.

ABOUT NOTTO

- ❖ NOTTO is set up under Directorate General of Health Services, Ministry of Health and Family Welfare, located in New Delhi.
- ❖ National Network division of NOTTO functions as apex centre for all India activities for procurement, distribution and registry of organs and tissues donation and transplantation in the country.
- ❖ Transplantation of Human Organs (Amendment) Act 2011 has established two divisions-
 - ✓ National Human Organ and Tissue Removal and Storage Network
 - ✓ National Biomaterial Centre (National Tissue Bank)

17.9 ENZYME REPLACEMENT THERAPY

- ❖ The first and only enzyme replacement therapy for the treatment of a very rare and complex blood disorder has been approved by the US Food and Drug Administration.
- ❖ Adzynma, the first recombinant (genetically engineered) protein product indicated for on-demand enzyme replacement therapy (ERT) in adult and pediatric patients with congenital thrombotic thrombocytopenic purpura (cTTP) has been approved for Takeda Pharmaceuticals U.S.A. Inc.

ABOUT ERT

- ❖ Enzyme replacement therapy is typically used to replace a missing or deficient enzyme in a person with an inherited enzyme deficiency syndrome.
- ❖ The replacement enzyme derived from human, animal or plant cells is administered directly into the bloodstream of patient through fluids.

ABOUT CTPP

- ❖ cTTP is a rare and life-threatening blood clotting disorder.

- ❖ It is caused by a disease-causing mutation in the **ADAMTS13** gene, which is responsible for making an enzyme, also named **ADAMTS13**, that regulates blood clotting.
- ❖ A deficiency in this enzyme causes blood clots to form in the small blood vessels throughout the body.
- ❖ **Symptoms** of this rare disorder typically develop in infancy or early childhood, but in some cases may develop in adulthood and may first manifest during pregnancy.
- ❖ Individuals with cTPP may experience severe bleeding episodes, strokes and damage to vital organs.
- ❖ If left untreated, the disease can be fatal.

17.10 MEASLES

- ❖ The number of measles deaths globally increased by 43% from 2021-2022, following years of declining vaccination rates, according to a new report from the World Health Organization (WHO) and the U.S. Centers for Disease Control and Prevention (CDC).
- ❖ The report noted that in 2022, 37 countries experienced large or disruptive measles outbreaks compared with 22 countries in 2021.
- ❖ Of these, 28 were in the WHO Region for Africa, six in the Eastern Mediterranean, two in the South-East Asia, and one in the European Region, WHO said.
 - ✓ According to the report, an estimated 11 lakh children in India missed their crucial first dose of measles vaccine in 2022.

ABOUT MEASLES

- ❖ Measles is a highly contagious disease caused by a virus.
- ❖ It spreads easily when an infected person breathes, coughs or sneezes.
- ❖ It can affect anyone but is most common in children.
- ❖ It infects the respiratory tract and then spreads throughout the body.
- ❖ **Symptoms** include a high fever, cough, runny nose, and a rash all over the body.
 - ✓ Complications such as brain swelling, pneumonia and breathing problems, and severe diarrhoea may lead to death.
- ❖ It can cause severe complications, and even death.
- ❖ Measles is preventable with two doses of MR (measles rubella) vaccine.
- ❖ **Two doses of the measles vaccine** offers 97% protection for life.
 - ✓ The protection is likely to be weaker with a single dose.

17.11 PARAMUTATIONS

- ❖ Research has improved in recent times on the phenomenon of Paramutations.

ABOUT MUTATIONS

- ❖ Each cell in our bodies has 23 pairs of chromosomes.
 - ✓ One of each pair is inherited from each parent.
- ❖ Every chromosome contains one long DNA molecule plus several chromosomal proteins.
- ❖ The DNA is made of four compounds called base.
- ❖ A gene is a specific sequence of bases in the DNA.
- ❖ A mutation is any change in the sequence of base in the DNA of a chromosome.
 - ✓ A paramutation is a small chemical modification of a chromosomal protein: it flips a nearby gene into a silenced state.
 - ✓ So the active and silenced versions of a paramutated gene share the same DNA sequence but their associated proteins have different modifications.
 - ✓ Paramutations can protect humans against viruses.

17.12 EKLAVYA SCHOOLS

- ❖ President Draupadi Murmu has recently inaugurated the Eklavya Model Residential School in Mayurbhanj, Odisha.

ABOUT EMRS

- ❖ Eklavya Model Residential Schools, initiated by the government in 1997-98, are designed to impart quality education to Scheduled Tribe (ST) children in remote areas.
- ❖ The objective is to empower them to access opportunities in higher and professional educational courses, ultimately facilitating their employment across various sectors.
- ❖ There has been nationwide establishment of over 700 Eklavya Model Residential Schools.
- ❖ Aim to provide quality education to more than 3.5 lakh tribal students across India, enabling them to contribute to the development of society and the nation.
- ❖ Each school has a capacity of 480 students, catering to students from Class VI to XII.
- ❖ Nodal ministry- Ministry of Tribal Affairs
- ❖ Minimum of 15 acres of Land is required for establishing EMRSs.
- ❖ Non-ST students can be admitted in these schools on seats up to 10% of the total seats.
- ❖ CBSE curriculum is followed in these schools, and education is completely free.

President Murmu is the first person from the tribal community to hold the nation's highest office.

17.13 SATHEE

- ❖ Ministry of Education (MoE) will write to all States to encourage aspirants to utilise the newly launched portal for exam preparation — SATHEE (Self Assessment Test and Help for Entrance Exams).

ABOUT SATHEE PORTAL

- ❖ The online coaching platform has been launched by the MoE and IIT-Kanpur.
- ❖ SATHEE is an open learning platform available to students at no cost.
- ❖ SATHEE hosts live and recorded lectures, expertly designed curriculum, and doubt-clearing sessions [for students] to brush up their knowledge.
- ❖ About 5,000 students from the Kendriya Vidyalayas, Navodaya Vidyalayas, and schools under the Central Board of Secondary Education (CBSE) have registered on the platform so far.
 - ✓ MoE goal is to reach 1,00,000 students.
- ❖ The portal uses Artificial Intelligence (AI) to interact with students, and can be customised to each student's pace of learning.
- ❖ The initiative is in line with the National Education Policy, with the goal to provide inclusive, high quality education even to remote parts of the country.
- ❖ Pan India mock tests are held every weekend, with the same look and feel adopted by the National Testing Agency (NTA) for conducting the JEE.
- ❖ SATHEE hosts lectures and video content prepared by Professors and students of the IITs, and the All India Institute of Medical Sciences (AIIMS).
- ❖ Currently, digital learning material is available on the SATHEE portal in four languages — English, Hindi, Odia, and Telugu.

17.14 KYASANUR FOREST DISEASE

- ❖ A study by the Indian Council for Medical Research and the National Institute of Virology has for the first time confirmed the presence of the Kysanur forest disease (KFD) virus in two more districts of the state—Hassan and Mysore.
- ❖ KFD is endemic in Karnataka.
- ❖ In 1957, KFD was first reported from Shivamogga.

ABOUT KFD

- ❖ KFD is a zoonotic disease.

- ❖ **Kyasanur forest disease virus (KFDV)** is transmitted through the bite of ticks and bonnet, and black-faced langur monkeys are highly susceptible to the infection.
 - ✓ They play a significant role in the spread of the virus in the human population.
- ❖ KFDV has been mainly found to affect humans in the forests of the Western Ghats region, with considerable morbidity.
- ❖ The disease manifests with an acute and a convalescent phase lasting for four weeks.
- ❖ In about 10-20 per cent of individuals, it may manifest with haemorrhagic or neurological complications.
- ❖ Reported mortality rate is about 2–10% and in recent years, KFDV has spread along the entire stretch of the Western Ghats region, which also includes Maharashtra, Kerala, Tamil Nadu and Goa.

17.15 AYURVEDA GYAN NAIPUNYA INITIATIVE (AGNI)

- ❖ **Central Council for Research in Ayurveda Sciences (CCRAS)**, in its new endeavour to promote research for mainstreaming the pragmatic Ayurveda practices through scientific validation and evidence-based appraisal, has launched “Ayurveda Gyan Naipunya Initiative” (AGNI) for physicians practicing in the field of Ayurveda.
- ❖ The AGNI project aims-
 - ✓ to provide a platform for Ayurveda practitioners to report their innovative practices & experiences in various disease conditions,
 - ✓ promoting the culture of evidence-based practice among Ayurveda Practitioners.
 - ✓ to undertake research for mainstreaming pragmatic practices through scientific validation and evidence-based appraisal.

ABOUT CENTRAL COUNCIL FOR RESEARCH IN AYURVEDA SCIENCES (CCRAS)

- ❖ CCRAS is an apex research organization committed to undertaking, coordinating, formulating, development and promotion of research on scientific lines in Ayurveda.
- ❖ Nodal ministry - Ministry of Ayush
- ❖ Earlier, to boost scientific research through Ayurveda colleges and hospitals, CCRAS has initiated -
 - ✓ Studentship Program for Ayurveda Research Ken (SPARK) for Undergraduate Scholars,
 - ✓ Scheme for Training in Ayurveda Research for PG Scholars (PG-STAR) for PG Scholars and
 - ✓ Scope for Mainstreaming Ayurveda Research in Teaching Professionals (SMART) program for teachers.

There are over 500,000 registered Ayurveda practitioners who are mainly practicing in India.

17.16 MONKEYPOX

- ❖ The ongoing monkeypox outbreak in the Democratic Republic of the Congo poses an escalating threat, not just to the nation but to the entire world.
- ❖ Also, the World Health Organization has confirmed sexual transmission of monkeypox in the Congo for the first time as the country's experiences its biggest-ever outbreak.

ABOUT M-POX

- ❖ It was first reported in 1958, in monkeys in the Democratic Republic of Congo (DRC) and in humans in 1970, also in the DRC.
- ❖ Monkeypox, also called mpox, has been endemic in parts of Central and West Africa for decades, where it mostly jumped into humans from animal and caused limited outbreaks.
- ❖ The natural reservoir of the virus is unknown – various small mammals such as squirrels and monkeys are susceptible.
- ❖ Transmission can occur through contact with bodily fluids, lesions on the skin or on internal mucosal surfaces, such as in the mouth or throat, respiratory droplets and contaminated objects.
- ❖ The monkeypox virus causes fever, chills, rash, and lesions on the face or genitals.

- ❖ Most **people recover within several weeks without requiring hospitalisation.**
- ❖ There is **no specific treatment or vaccine available for Monkeypox infection.**

17.17 GENERIC DRUGS FOR RARE DISEASES

- ❖ Providing relief to **patients with rare diseases across India**, the **Union Health Ministry has made available generic drugs to support the care and treatment of four ailments-** Tyrosinemia-Type 1, Gauchers Disease, Wilson’s Disease, and the Dravet-Lennox Gastaut Syndrome.
- ❖ This means that the **cost of these drugs will be slashed by anywhere between 60 and 100 times of their current market value.**

Disease	Impact	Drop in cost
Tyrosinemia type 1		used to require an annual expenditure of ₹ 2.2 crore to ₹ 6.5 crore, now costs ₹ 2.5 lakh for the same duration. If untreated, a child dies of the disease by the age of 10. The drug for treating the disease is called Nitisinone.
Gaucher's Disease	results in liver or spleen enlargement, bone pain and fatigue	Eliglustat capsules- cost brought down from ₹ 1.8-3.6 crore per year to ₹ 3.6 lakh
Wilson's Disease	causes a copper deposit in the liver and psychiatric symptoms	Trientine capsules- from ₹ 2.2 crore to ₹ 2.2 lakh per year
Dravet/ Lennox Gastaut Syndrome	causes complex seizure syndromes	Cannabidiol oral solution, from ₹ 7-34 lakh per year to ₹ 1-5 lakh.

ABOUT RARE DISEASES

- ❖ A **rare disease is a health condition of particularly low prevalence that affects a small number of people.**
- ❖ WHO defines rare disease as often **debilitating lifelong disease or disorder with a prevalence of 1 or less, per 1000 population.**
- ❖ There are **6,000-8,000 classified rare diseases**, but **less than 5% have therapies available to treat them.**
- ❖ It **collectively afflicts 6-8% of the population in any country at any given time**, so India could have **8.4 crore to 10 crore such cases**, according to the Ministry.
- ❖ Nearly **80% of these diseases are genetic**, which means that **symptoms are seen, and require treatment, at an early age.**

18. MISCELLANEOUS

18.1 AI- WORD OF THE YEAR

- ❖ **Collins Dictionary** has declared "**AI**" which stands for **Artificial Intelligence** as the **Word of the Year for 2023.**
- ❖ The dictionary **defines AI** as the "**modelling of human mental functions by computer programs.**"
- ❖ It reflects the **increasing prominence of Artificial Intelligence in our daily lives.**

18.2 NEST INITIATIVE

- ❖ To promote **sustainable and eco-friendly constructions** in the **domestic housing sector**, the **Indian Green Building Council (IGBC)** launched a **rating and certification initiative 'Nest'**.
 - ✓ IGBC is a part of the **Confederation of Indian Industry**.
- ❖ **'Nest'** would help **pave the way for individual house owners and the residential sector to adopt green building features in a big way**
- ❖ It aims to help in **bringing down electricity consumption, water usage and creating a healthy living space**

19. HIMACHAL NEWS

19.1 SOON, ROPEWAY TO CONNECT UNA'S CHINTPURNI TEMPLE

- ❖ **Chintpurni shrine in Una district** will soon be connected with a **Rs 76.50-crore ropeway** which will ferry devotees to the ancient temple.
- ❖ It would **facilitate 700 pilgrims per hour in each direction**, significantly enhancing the overall pilgrim experience.
- ❖ The **Chintpurni temple** is recognised as one of the **Shakti Peeths** and the most sacred shrine in the state.
- ❖ The ropeway with a span of **1.1 km** will give **impetus to religious tourism in the state**.

19.2 CHAURASI PAURIS MONUMENT TO BE RESTORED

- ❖ The **Indian National Trust for Art and Cultural Heritage (INTACH)** will take up the work for restoration of **84 Pauris (stairs)** in Una town.
- ❖ The **84 Pauris** were about **250 years old monument** and was linked to the history of Una town.
- ❖ The monument also has **significance in Sikh history** as it is linked with the descendants of **Guru Nanak Dev Ji**.
- ❖ **Chaurasi (84) Pauris** built here is a **monument of mutual brotherhood**.
- ❖ These also signify the **84 'yonis'**, which a human has to pass to attain nirwana as per Hindu mythology.
- ❖ The **'pauris'** were built with **stones brought from various places of religious significance**.
- ❖ It was **built by sages of all religions of the time** as every stone laid was brought in with prayers and reverence.

19.3 WORK ON RS 1,555-CRORE ROPEWAY IN SHIMLA TO BEGIN NEXT YEAR

- ❖ The work on the **Rs 1,555 crore Innovative Urban Ropeway Transport Project** to decongest the state capital is likely to begin next year.
- ❖ Its **detailed project report (DPR)** has been submitted to **New Development Bank (NDB)**, which will fund the project.
- ❖ It will be the **second largest urban ropeway network** in the world after **La Paz in Bolivia**.
- ❖ The **13.65-km ropeway** with **13 boarding and de-boarding stations** and one turning station is aimed at **decongesting Shimla**.
- ❖ **Each of the 13 stations** will have a distance of **1 km to 1.5 km**.
- ❖ It will help in **decongesting Shimla for the next 40 years** and provide an **eco-friendly and affordable overhead safe mode of public transportation**.

19.4 WORLD BANK PLEDGES USD 200 MILLION TO PROPEL HIMACHAL PRADESH'S 'GREEN STATE' VISION

- ❖ In a significant move towards green energy expansion, the **Government of India**, the Government of **Himachal Pradesh**, and the **World Bank** have signed a **USD 200 million project** aimed at advancing power sector reforms in Himachal Pradesh.
- ❖ The **project will focus on increasing the share of renewable energy (RE)** in the state's electricity generation, aligning with Himachal Pradesh's goal to add **10,000 megawatts of additional RE capacity**.
- ❖ Himachal Pradesh is on a mission to become a **'Green State'** by meeting all its energy needs through **renewable and green energy sources by 2030**.
- ❖ Currently, **more than 80 per cent of the state's energy demands are met through hydropower**.
- ❖ The **Himachal Pradesh Power Sector Development Program**, backed by the **World Bank**, will aid the state in **optimizing its existing RE resources, particularly hydropower, while diversifying its RE sources**.

19.5 PATHRON KA MELA

- ❖ The **centuries-old annual "Pathron Ka Mela" (stone-pelting fair)**, a unique festival held a day after Diwali, was celebrated at **Dhami**, about **30 km from Shimla**.
- ❖ The **festival, marked by pelting of stones between two groups of villagers**, started in the presence of the former ruler of Dhami known as **Halog** and lasted for **50 minutes**.
 - ✓ It **ended** when a person sustained a **minor injury which caused bleeding**.
- ❖ As per the tradition, the **stone pelting takes place between residents of Halog and Jamog** who line up on **either side of a circular structure** and **pelt small stones at each other**.
- ❖ The **fair begins when the priest of Narsingh Devta temple walks to the Kali Devi temple accompanied by a team of musicians**.
- ❖ As per traditions, the **festival continues till blood starts oozing from the wounds of the injured people**. The **villagers smear "tilak" of blood on the forehead of goddess Kali**.

19.6 RENUKA JI FAIR

- ❖ The **six-day international Renuka Ji fair** was inaugurated in **Sirmaur district**.
- ❖ The **palanquin of Lord Parshuram and other deities** is brought to **Renuka Ji** from the ancient temple at **Jamu Koti village** and it **departs after religious ceremonies, which include a dip in Renuka Lake**.
- ❖ The **fair signifies the union of Lord Parshuram with his mother Goddess Renuka on Dashmi**.
- ❖ Every year on the **Devprobodhini Ekadashi**, the **traditional Renukaji fair** is organised on the banks of the **Renuka Lake** where **lakhs of devotees converge**.

19.7 SHIKARI DEVI TEMPLE

- ❖ The **local administration of Thunag** has **banned trekking expeditions towards hills of Shikari Devi temple**, a **famous tourist place in Mandi district** in view of **public safety because of the onset of winter**.
- ❖ The place **receives about 10 feet snow every year during winter**, denying access to **Shikari Devi hills**.
- ❖ **Shikari Devi temple** is **located about 18 km away from Janjehli** and is **connected by a motorable forest road**.
- ❖ It is **situated at an altitude of 3,359 metres**.
- ❖ There are **thick forests on the way to Shikari Devi peak**.
- ❖ Being the highest peak of Mandi district, it is called the **Crown of Mandi**.
- ❖ On the **Shikari peak**, there is a **roofless temple of Shikari Devi**, the **Goddess of hunters**.
- ❖ This **temple is said to be established (Sathapit) by Pandavas**.
- ❖ It is said that **sage Markanday also meditated at this place for number of years**.

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