



- **Leatherback Sea Turtle** = It is the **largest** turtle in the world + It is the **only** species of sea turtle **that lack scales and a hard shell** + These turtles are highly **migratory** which can swim over 10,000 miles a year between nesting and foraging grounds + It has a unique **thermoregulatory adaptation** allows them to maintain core body temperatures at extremely cold depths + It is found in every ocean **except the Arctic and Antarctic** + They have the **widest global distribution of any reptile**, with nesting mainly on tropical or subtropical beaches + IUCN: Endangered + CITES: Appendix I.
- **SIGHT Programme** = It is a sub component under the **National Green Hydrogen Mission** + It aims at providing **electrolyser manufacturing incentives** with a total outlay of INR 4440 crore + It focuses on green hydrogen production with financial outlay of INR 13050 crore + Recently, the union Ministry of New and Renewable Energy (MNRE) has issued scheme guidelines for implementation of strategic interventions for green hydrogen transition (SIGHT) programme.
- **United Nations Global Compact (UNGC)** = UNGC is a call to **companies** everywhere to align their operations and strategies with **Ten Principles in the areas of human rights, labour, environment and anti-corruption** + Launched in 2000, UNGC is the **largest corporate sustainability initiative in the world**, with more than 15,000 companies and 3,000 non-business signatories based in over 160 countries, and more than 70 Local Networks + This UN-led initiative promotes activities that contribute to sustainable development goals to create a better world.
- **Satpura Tiger Reserve** = Madhya Pradesh + It is an example of a central Indian highlands ecosystem + It supports **17% of India's tiger population and 12% of its tiger habitat** + STR was declared as the **first biosphere reserve of Madhya Pradesh** in the year 1999. It consists of **three protected areas- Satpura National Park, Bori Sanctuary and Pachmarhi Sanctuary** + Satpura, basically meaning "Seven Folds", forms a **watershed between Narmada and Tapti Rivers** + It has corridor connectivity with **Pench National Park** + Archeological significance: There are **55 rock shelters** which are 1500 to 10000 years old with wall paintings depicting animals like elephants, tigers, deers, and porcupines.
- **Shanghai Cooperation Organisation(SCO)** = Permanent and **Intergovernmental** political, economic, and military organization founded in **Shanghai** in 2001 (The precursor group **Shanghai 5** included: China, Kazakhstan, Kyrgyzstan, Russia and Tajikistan) + Regional development and security issues (terrorism, ethnic separatism, and religious extremism) are its main focus + working language: **Russian and Mandarin** + SCO accounts for **24% of the world GDP** and **43% of the global population** + shanghai spirit i.e. mutual trust, mutual benefit, equality, consultation + respect for cultural diversity and pursuit of common development underpins the working of the SCO + It has 8 members now with India and Pakistan became its permanent members in 2017.
 - **Regional Anti-Terror Structure Mechanism (RATS)** = under Shanghai Cooperation Organization (SCO) + **permanent organ** + It is **HQ in Tashkent**, Uzbekistan. The **Head of RATS** is elected to **three year term**. Each member state also sends permanent representative to RATS + India assumed the chairmanship of Council of (RATS-SCO) in 2021 for a period of one year.
- **Nano Urea** = Nano Urea is a Nano-fertilizers that contains nano nitrogen particles of size range 20-50 nm dispersed in water + Ministry of Agriculture & Family Welfare has notified Nano Urea as nano fertilizer in 2021 under Fertilizer Control Order (FCO), 1985 + Nano-urea is developed by the Indian Farmers and Fertiliser Cooperative (IFFCO), a **multi-state cooperative society** (based in New Delhi) and promoted by the government as a panacea to reduce farmer reliance on packaged urea + It is the **only Nano fertiliser** approved by the Government of India and **included in the Fertiliser Control Order (FCO)** + Earlier, Prime Minister of India officially inaugurated the country's first liquid nano urea plant at Kalol, Gujarat. Recently, Union

Minister of Chemicals and Fertilizers has inaugurated the IFFCO Nano Urea Liquid Plants at Aonla and Phulpur in Uttar Pradesh + The urea absorption rate by crops is 80 percent in the case of Nano Urea whereas the traditional urea absorption rate is only 30 percent. Nano Urea is cost-effective and demonstrated an increase in crop yield. It is produced by an energy-efficient, environment-friendly production process with less carbon footprints. It is also easy to store than urea bags.

➤ **Har Ghar Jal Initiative** = Har Ghar Jal initiative is part of the Jal Jeevan Mission + Its objective is to provide potable water connections to all rural households in the country by 2024 + The mission aims to achieve 100% coverage of tap water connections in rural areas by 2024 + The funding is shared between the central government and states/union territories, with the central government contributing 50% of the cost + Goa and Dadra & Nagar Haveli and Daman & Diu (D&NH and D&D) becomes the first 'Har Ghar Jal' certified State and UT in the country respectively + It comes under the Department of Drinking Water and Sanitation, Jal Shakti Ministry + States like Punjab (99.9%), Himachal Pradesh (97.2%), and Bihar (96%) are nearing to fulfil the Har Ghar Jal motto.

➤ **Swachh Sujal Pradesh** = Certification by Jal Shakti Ministry + Andaman and Nicobar (A&N) Islands have become India's first Swachh Sujal Pradesh + The certification has 3 components (i) Safe and secure drinking water supply and management (ii) ODF Sustainability and Solid and Liquid Waste Management (SLWM) and (iii) Cross-cutting interventions like convergence, IEC (Information, Education Communication), action planning, etc + All villages on A&N Islands have received Har Ghar Jal certification.

➤ **Floral and Faunal Database** = Recently, The details of new discoveries and new records were released by Union Minister for Environment, Forest and Climate Change adding 664 animal species to its faunal database in 2022, 339 taxa to its flora in India.

- **Faunal Database** = Compiled by Zoological Survey of India (ZSI) titled Animal Discoveries - New Species and New Records 2023 + India added 664 animal species to its faunal database in the year 2022. These comprise 467 new species and 197 new records [species found in India for the first time] + some of the species discovered are:

- **Miniopterus phillipsi** = a long-fingered bat + Meghalaya + Mammal
- **Glischropus meghalayanus** = a bamboo-dwelling bat + Meghalaya + Mammal
- **Sela Macaque** = new macaque species + Arunachal Pradesh + named after Sela Pass
- **Macaca leucogenys** = a white-cheeked macaque earlier found in Modog, southeastern Tibet, and sighted in India for the first time in 2022 in West Siang, Arunachal Pradesh
- **Ficedula zanthopygia** = the yellow-rumped flycatcher, earlier known from Mongolia China, Korea, Japan, and found last year in Narcondam Island of the Andaman archipelago.

- **Floral Database** = Compiled by the Botanical Survey of India (BSI) in Plant Discoveries 2022 + About 21% of the total discoveries were made from the western Himalayas followed by 16% from the Western Ghats + Among the new genus of plants discovered are:

- **Nandadevia Pusalkar**: a genus common throughout the foothills and warm outer valleys of the Uttarakhand Himalayas
- **Nilgiriella Pusalkar**: endemic to the southern Western Ghats of India and distributed in Karnataka, Kerala and Tamil Nadu.
- **Calanthe lamellose**: orchid species + Earlier recorded in China and Myanmar, and found for the first time in India in the Japfu mountain range in Kohima, Nagaland.

➤ **Ol Chiki Script** = Ol Chiki script, also known as Ol Chemet', Ol Ciki, Ol, and sometimes as the Santali alphabet, is the official writing system for Santhali, an Austroasiatic language

recognized as an official regional language in India + It was created in 1925 by Raghunath Murmu (1905-1982) + Santhali language is spoken mainly in Jharkhand and West Bengal states in northern India, and also in northwestern Bangladesh, eastern Nepal and Bhutan.

➤ **Hul Diwas** = The Santhal rebellion or ‘Hul’ – literally, revolution – began in 1855 two years before the uprising of 1857 + It was an “organised war against colonialism” led by the Santals, standing against the myriad forms of economic oppression + It was led by two brothers Sidhu and Kanhu + Other tribal fighters include: Chand-Bhairav and Phulo-Jhano + It saw the participation of as many as 32 caste and communities rallying behind them.

➤ **Diversity for Restoration (D4R) Tool** = devised by Bioversity International + Researchers have devised a tool that enables appropriate agroforestry and aids systematic ecosystem restoration + The team from Ashoka Trust for Research in Ecology and the Environment (ATREE), with the help of Bioversity International, modified it to promote restoration programmes in India.

○ **Bioversity International** = Non-profit research-for-development + Bioversity International is a global research-for-development organization that delivers scientific evidence, management practices and policy options to use and safeguard agricultural biodiversity to attain global food- and nutrition security + Headquarter at Rome, Italy + Bioversity International is a member of the CGIAR, a global research partnership for a food-secure future.

○ **CGIAR (formerly the Consultative Group for International Agricultural Research)** = It is a global partnership that unites international organizations engaged in research about food security + CGIAR research aims to reduce rural poverty, increase food security, improve human health and nutrition, and sustainable management of natural resources + It is carried out at 15 centers (CGIAR Consortium of International Agricultural Research Centers) that collaborate with partners from national and regional research institutes, civil society organizations, academia, development organizations, and the private sector + CGIAR is an adhoc organization funded by its members + Members include the USA, Canada, the UK, Germany, Switzerland, Australia and Japan, the Ford Foundation, the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD), the United Nations Development Programme (UNDP), the World Bank, the European Commission, the Asian Development Bank, the African Development Bank, and the Fund of the Organization of the Petroleum Exporting Countries (OPEC Fund)

➤ **Pangong Tso lake** = It is the world's highest saltwater lake + An endorheic lake spanning eastern Ladakh and West Tibet + It is divided into five sublakes, called Pangong Tso, Tso Nyak, Rum Tso (twin lakes) and Nyak Tso + Approximately 50% of the length of the overall lake lies within Tibet, China, 40% in Ladakh India and the rest is disputed and is a defacto buffer zone between India and China + During winter the lake freezes completely, despite being saline water + It has a land-locked basin separated from the Indus River basin by a small elevated ridge, but is believed to have been part of the latter in prehistoric times + It is also known to change colours, appearing blue, green, and red at different times.

➤ **Gucchi Mushroom** = It is a species of fungus in the family Morchellaceae of the Ascomycota + It is also known as morel + They are pale yellow in colour with large pits and ridges on the surface of the cap, raised on a large white stem + It cannot be cultivated commercially and grow in conifer forests across temperature regions, and the foothills in Himachal Pradesh, Uttarakhand, and Jammu and Kashmir + These mushrooms usually grow in clusters on logs of decaying wood, leaves or humus soil + It is known to be one of the most expensive mushrooms.

➤ **CH₃⁺ Molecule** = It is also known as methyl cation + CH₃⁺ is a very simple organic molecule, just one carbon atom and 3 hydrogen atoms + It reacts with other molecules to form more

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complex ones + Its presence in space tells us that basic building blocks for life are out there. It is an initiator of a lot of very interesting more complex reactions + Recently, the CH₃⁺ molecule has been detected in space for the first time by the James Webb Space Telescope (JWST).

➤ **Gutti Koya Tribe** = Koya population is concentrated in Telangana, Andhra Pradesh, Chhattisgarh and Odisha + They speak the Koya, which is a Dravidian language + The most important fair celebrated by Koyas is the Sammakka Saralamma Jatra once in two years on full moon day of the Magha Masam (January or February) + They practice Podu form of shifting cultivation.

➤ **Orkney Islands** = off the north coast of Scotland + The islands have been inhabited since prehistoric times and are home to numerous archaeological sites, including Neolithic stone circles, chambered tombs (such as Maeshowe) + Heart of Neolithic Orkney is designated as UNESCO world Heritage site.

➤ **National Chambal Sanctuary** = National Chambal Sanctuary lying at the tri-junction of three states Madhya Pradesh, Uttar Pradesh and Rajasthan + It is home to the critically endangered Gharial, the red-crowned roof turtle and the endangered Ganges River dolphin + Chambal supports the largest population of Gharials in the wild + (Chambal River = It originates at the Singar Chouri peak in the northern slopes of the Vindhya mountains (Indore, Madhya Pradesh) + From Madhya Pradesh, it enters Rajasthan and then Uttar Pradesh + In UP it joins the Yamuna River in Etawah District + Tributaries: Banas, Kali Sindh, Sipra, Parbati, etc + The National Chambal Sanctuary is located along the river Chambal + It is known for the critically endangered Gharial + Main Power Projects/ Dam: Gandhi Sagar Dam, Rana Pratap Sagar Dam, Jawahar Sagar Dam, and Kota Barrage)

➤ **Bhashini Platform** = Digital India BHASHINI, is India's Artificial Intelligence (AI)-led language translation platform + It seeks to enable easy access to the internet and digital services in Indian languages, including voice-based access, and help the creation of content in Indian languages + It aims to make Artificial Intelligence and Natural Language Processing (NLP) resources available in the public domain to be used by -- Indian MSMEs, startups and individual innovators.

➤ **Ambergris** = (French for grey amber) + generally referred to as whale vomit + preternaturally hardened whale dung + produced only by 1% of sperm whales + sperm whale eats several thousand squid beaks a day + Occasionally, a beak makes its way to whale's stomach and into its looping convoluted intestines where it becomes ambergris through a complex process, and may ultimately be excreted by whale + it is a solid waxy substance that floats around surface of water body and at times settles on coast + This excretion is so valuable that it is referred to as floating gold, because of its use in perfume markets (like Dubai), especially to create fragrances like musk + also used in traditional medicines.

➤ **Sperm Whale** = Sperm whales are the largest of the toothed whales and have one of the widest global distributions of any marine mammal species + It is dark blue-gray or brownish, with white patches on the belly + It is thickset and has small paddle-like flippers and a series of rounded humps on its back + It is found in temperate and tropical waters throughout the world + IUCN: Vulnerable + CITES: Appendix I + Wildlife (Protection) Act, 1972: schedule 2.

➤ **Mosaic Virus** = A mosaic virus is any virus that causes infected plant foliage to have a mottled appearance. Such viruses come from a variety of unrelated lineages and consequently there is no taxon that unites all mosaic viruses + It affects a wide variety of horticultural and vegetable crops — roses, beans, tobacco, tomatoes, potatoes, cucumbers, pumpkins, squash, melons, and peppers.

- **Tomato Mosaic Virus (ToMV)**: It belongs to the Virgaviridae family and is closely related to the tobacco mosaic virus (TMV) + It hosts include tomato, tobacco, peppers,

PJ | UP
MP

and certain ornamental plants + It spreads mainly through infected seeds, saplings, agricultural tools.

- **Cucumber Mosaic Virus(CMV):** It has a much larger host pool that includes cucumber, melon, eggplant, tomato, carrot, lettuce etc + It was identified in cucumber in 1934, which gave the virus its name + It is spread by aphids which are sap-sucking insects.

➤ **World Investment Report 2023** = Recently published by United Nations Conference on Trade and Development (UNCTAD) + The report said that India and ASEAN were the most resilient destinations, with FDI increases of 10% and 5%, respectively + FDI inflows were higher in developing countries compared with those in developed economies. China, the second largest FDI host country in the world, saw a 5% increase.

➤ **JIMEX 2023** = 11th Edition since 2012 + bilateral Japan-India Maritime Exercise 2023 + took place at/off Visakhapatnam + Other Exercises between India and Japan include

- Malabar: India and Japan with the United States and Australia participate in the naval war gaming exercise named Malabar.
- SHINYUU Maitri (Air Force) and
- Dharma Guardian (Military Exercise)

➤ **Peste Des Petits Ruminants (PPR)** = PPR is a highly contagious viral disease of sheep and goats with high mortality + It is caused by a virus of the family paramyxoviridae and genus morbillivirus. It is closely related to other members of the genus, including the rinderpest virus, measles virus, and canine distemper virus + The PPR virus does not infect humans + Once introduced, the virus can infect up to 90 percent of an animal herd, and the disease kills anywhere from 30 to 70 percent of infected animals + PPR is mainly spread during close contact when a susceptible animal inhales the virus from infected animals' coughing and sneezing + Currently, a global initiative driven by the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) exists to eradicate PPR by 2030.

➤ **OpenKylin** = It is China's first open-source desktop operating system (OS) + The country hopes to reduce its dependence on US technology + It is developed by group of countries known as China Electronics Corp + An Open-source OS is the OS in which source code is visible publicly and editable + The generally known Operating Systems like Microsoft's Windows, Apple's iOS and Mac OS, are closed OS + Closed Operating Systems are built with numerous codes and complex programming and that is called source code. This source code is kept secret by the respective companies (owners) and inaccessible to third parties. In the case of an Open-Source Operating system, everyone can access and edit the source code.

➤ **Ubinas Volcano** = Peru + Ubinas is a stratovolcano located in the Central Volcanic Zone of the Andes + Please Note: Moquegua region is also situated in Peru region.

➤ **Global Peace Index 2023** = Released annually by the Institute for Economics and Peace (IEP) + It ranked 163 countries + It measures the state of peace across three domains: Societal safety and security; Ongoing domestic and international conflict; Militarization + Iceland is the most peaceful country in the world, since 2008, accompanied at the top by Denmark, Ireland, New Zealand, and Austria + Conversely, Afghanistan is the least peaceful country in the world for the eighth consecutive year. It is followed by Yemen, Syria, South Sudan, and the Democratic Republic of the Congo + India's position on the Global Peace Index stands at 126 out of 163 countries. With an overall score of 2.31, India falls below the global average of 2.314. Although, India's rank has improved since last year on the index.

➤ **GST Council** = It is a constitutional body established under Article 279A (1), introduced through the 101st Constitutional Amendment Act + Under Article 279A (4), the GST rates to the Union and States are recommended by the GST Council + The GST rates are decided mutually by States and Center at the GST Council Meeting + The GST Council has a quorum

requirement of one-half of total members for meeting + Its decisions are based on a majority of not less than three-fourths of the weighted votes of the members present and voting + The weightage of central government vote is one-third of the total votes cast while that of all states taken together is remaining two-thirds of the total votes cast + Recently, the Supreme Court, in **Union of India vs Mohit Minerals Pvt Ltd**, held that the recommendations of the GST Council are not binding on either the Centre or the States + GST Council Office is in New Delhi with Revenue Secretary as the Exofficio Secretary to the GST + Composition of GST Council

- Union Finance Minister—Chairperson
- The Union Minister of State, in-charge of Revenue or finance—Member
- The Minister In-charge of finance or taxation or any other Minister nominated by each State Government – Members.
- The Vice-Chairperson is selected by members of the Council from one amongst themselves [Article 279A (3)]

➤ **Exercise SALVEX 2023** = 7th edition + Indian Navy – US Navy have been participating in joint Salvage and EOD exercises since 2005 + Other military exercise between India and USA are:

- **Malabar Exercise**: It is a quadrilateral naval exercise of India, USA, Japan and Australia
- **Exercise Tiger Triumph**: It is a humanitarian Assistance and Disaster Relief exercise.
- **Yudh Abhyas**: It is a joint military exercise

➤ **Santa Fe Frog** = Scientist discover extremely rare “leopard-print” frog + It is an extremely rare species found only in South American countries namely Argentina, Bolivia and Paraguay + IUCN: Near Threatened + The frog is under threat as its habitat the Dry Chaco is cut down + **Grana Chaco** is lowland alluvial plain in interior south-central South America. It is bounded on the west by the Andes mountain ranges and on the east by the Paraguay and Paraná rivers.

➤ **NeSDA Portal** = Recently, secretary of Department of Administrative Reforms and Public Grievances launched the 3rd edition of the **National e-Governance Service Delivery Assessment (NeSDA) portal** + NeSDA framework, launched in 2018 was conceptualized with an overall objective to measure the depth and effectiveness of existing e-Governance service delivery mechanisms + This framework is based on the Online Service Index (OSI) of UN eGovernment Survey + The framework covers six sectors, Finance, Labour & Employment, Education, Local Government & Utilities, Social Welfare (including Agriculture & Health) and Environment (including Fire) sectors.

➤ **Naegleria fowleri** = Recently, a 15-year-old boy in Kerala recently died due to a rare infection caused by Naegleria fowleri, or “brain-eating amoeba” + It is an amoeba (single-celled living organism) that lives in soil and warm freshwater, such as lakes, rivers, and hot springs + Commonly called the “brain-eating amoeba” + Naegleria fowleri is a heat-loving (thermophilic) organism, meaning it thrives in heat and likes warm water + It infects people when water containing the amoeba enters the body through the nose + There is no evidence that Naegleria fowleri can spread through water vapor or aerosol droplets + People cannot be infected with Naegleria fowleri by drinking contaminated water + Naegleria fowleri infection does not spread from person to person, nor does it manifest symptoms when contracted in other forms.

➤ **Periyar Tiger Reserve (PTR)** = Located in the Western Ghats of Kerala + It was declared a Tiger Reserve in 1978 + It gets its name from the River Periyar which has its origin deep inside the reserve + Two main rivers, Pamba and Periyar drain the reserve + It is home to many tribal communities including the Mannans and the Palians + Recently, Project Vriksha Samridhi, Matsya Samridhi has been launched to augment fish wealth by planting six varieties of trees such as njava (Syzygium cumini) and pattathali (Actinodaphne malabarica).

- **Periyar River** = The Periyar River is the longest river in the state of Kerala + It is also known as 'Lifeline of Kerala' as it is one of the few perennial rivers in the state + Periyar River originates from Sivagiri hills of Western Ghats, in Tamil Nadu and flows through the Periyar National Park + The main tributaries of Periyar are Muthirapuzha, Mullayar, Cheruthoni, Perinjankutti.
- **Farmers Distress Index** = The Central Research Institute for Dryland Agriculture (CRIDA), an institution under the Indian Council of Agricultural Research (ICAR) started working on a kind of an early warning system called 'farmers distress index' + The index will try to anticipate this distress and prevent its spread from a few farmers to the village or block level by pre-warning different stakeholders, including central, state, local and also non-government agencies.
- **Enteroviruses** = Enteroviruses are a group of viruses that can cause various infectious illnesses and are responsible for annual epidemics + There are many kinds of enteroviruses, including coxsackieviruses, echoviruses, polioviruses, and the hepatitis A virus + All enteroviruses are antigenically heterogeneous and have wide geographic distribution + They can infect anyone, but are more likely to cause illnesses in people with weak immune systems, as well as infants, children, and teens who don't have immunity against a virus yet because it's their first exposure to it + Illness is usually mild but has been found to affect neonates differently and sometimes more severely than older children and adults + There is no specific treatment for enterovirus infection.
- **SCORES Platform** = centralized grievance redress system of SEBI + 2011 + SCORES enables investors to lodge and follow up their complaints and track the status of redressal of such complaints online from the above website from anywhere + According to the regulatory authority, complaints can be lodged on SCORES for any issues covered under the Sebi Act, Securities Contract Regulation Act, Depositories Act, and rules and regulations and provisions of Companies Act, 2013.
- **Chemical Weapons Convention** = It is a multilateral treaty that bans chemical weapons and requires their destruction within a specified period of time + It entered into force in 1997 + It requires states-parties to declare in writing to the OPCW their chemical weapons stockpiles, chemical weapons production facilities (CWPFs), relevant chemical industry facilities, and other weapons-related information + The CWC is open to all nations and currently has 193 states-parties + India is a signatory and party to the Chemical Weapons Convention + It has signed the treaty at Paris on 14th day of January 1993 + It is pursuant to provisions of the Convention enacted the Chemical Weapons Convention Act, 2000.
 - **Organisation for the Prohibition of Chemical Weapons (OPCW)** = It is the implementing body of the Chemical Weapons Convention (CWC) + Mission: To implement the provisions of the Chemical Weapons Convention (CWC) in order to achieve the OPCW's vision of a world that is free of chemical weapons and of the threat of their use, and in which cooperation in chemistry for peaceful purposes for all is fostered + Headquarters: Hague, Netherlands + It receives states-parties' declarations detailing chemical weapons-related activities or materials and relevant industrial activities + It is authorized to perform inspections to verify that signatory states are complying with the convention + It also performs testing of sites and victims of suspected chemical weapons attacks.
- **Geocoding** = Recently, the Goods and Services Tax Network (GSTN) made the geocoding functionality live for all states and union territories + Geocoding converts an address or description of a location into geographic coordinates + It has been introduced to ensure the accuracy of address details in GSTN records and streamline the address location and verification process + This is a one-time activity and once submitted, revision in the address is not allowed + **(Goods and Services Tax Network** = It is a nonprofit non-government company

registered under Section 8 of the Companies act, 2013 + It will provide shared IT infrastructure and service to both central and state governments including tax payers and other stakeholders + The private players hold 51% equity in the GSTN and the Centre and State governments together holds 49% equity in GSTN)

- **Indian Grey Hornbill** = It is a common hornbill found on the Indian subcontinent + It is commonly sighted in pairs. These birds are known to be arborea i.e., spend most of their time on tall trees, but may descend for food and to collect mud pellets for nesting + Unlike a lot of other birds, the male and female look similar + It is one of the few hornbill species found in urban areas in many cities where they are able to make use of large trees in avenues + Distribution: Indian subcontinent; found from north-east Pakistan and south Nepal east to north-west Bangladesh and south throughout most of India except in Assam + IUCN: Least Concern.
- **Takeshima Island** = Disputed territory between Japan and South Korea + It is situated in the middle of the Sea of Japan + It is lying almost equidistant between the Korean Peninsula and Japan + It is called Dokdo in South Korea and Takeshima in Japan.
- **PBW RS1** = New Wheat Variety + Recently, the Ludhiana-based institution has developed a new variety of wheat called PBW RS1 + It contains high amylose starch content. Resistant starch (RS) won't cause an immediate and rapid rise in glucose levels. The high amylose and resistant starch, instead, ensure that glucose is released more slowly into the bloodstream. Amylose starch content known to reduce risks of type-2 diabetes and cardiovascular diseases. Food prepared from its whole grain flour also have lower glycemic index.
- **Convention on Cluster Munitions** = It was adopted in Dublin in 2008 + It prohibits all use, stockpiling, production and transfer of cluster munitions + The Convention became binding international law when it entered into force in 2010 + India is not a signatory to this convention + **(Cluster Bombs** = A cluster bomb is a type of weapon that is designed to disperse smaller bombs over a large area + They are also known as cluster munitions, with the smaller bombs referred to as submunitions or bomblets + They can be dropped from air or fired from ground/sea, dispersing dozens or hundreds of bomblets across a large area + These explosions pose a grave threat to anyone in the vicinity, causing death or severe injuries + Some bomblets fail to detonate immediately, leaving behind unexploded ordnance that can harm or kill people for years to come + The use of cluster bombs has been widely condemned internationally. Over 100 countries have ratified the Convention on Cluster Munitions.)
- **Palamu Tiger Reserve** = Jharkhand + The reserve forms a part of the Betla National Park + Three rivers namely North Koyal, Auranga and Burha flow through the valleys.
- **Protection of Plant Varieties and Farmers' Rights Authority** = Statutory Body + It works under the Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare + PPV&FR Act was enacted in 2001 to comply with the World Trade Organisation's Agreement on Trade-Related Aspects of Intellectual Property Rights + Over the last decade, more than 3,600 plant varieties have been registered under the Act, with more than half of the registration certificates going to farmers themselves.
- **Quantum Computing** = Recently, Microsoft announced that they had figured out a way to create an elusive kind of particle that could potentially revolutionise quantum computing + Quantum Computing is an area of computer science that uses the principles of quantum theory + Quantum theory explains the behaviour of energy and material on the atomic and subatomic levels + Quantum computers have the capability to sift through huge numbers of possibilities and extract potential solutions to complex problems and challenges + They are two features of quantum physics on which quantum computing is based + They empower quantum computers to handle operations at speeds exponentially higher than conventional computers and with much less energy consumption.

- **Superposition** = A qubit places the quantum information that it contains into a state of superposition + This refers to a combination of all possible configurations of the qubit. Groups of qubits in superposition can create complex, multidimensional computational spaces + Complex problems can be represented in new ways in these spaces.
- **Entanglement** = Pairs of qubits can be made to become entangled + This means that the two qubits then exist in a single state. In such a state, changing one qubit directly affects the other in a manner that's predictable + Quantum algorithms are designed to take advantage of this relationship to solve complex problems + While doubling the number of bits in a classical computer doubles its processing power, adding qubits results in an exponential upswing in computing power and ability.

➤ **Namda Art** = It is said to have begun in the 16th century when Mughal Emperor Akbar wanted to get a covering for his horses to protect them from the cold + It was introduced by a Sufi saint named Shah-e-Hamdan to Kashmiris + Namda is a type of traditional Kashmiri felted carpet that is created using sheep wool and has colourful hand embroidery + The distinct feature of this Kashmiri craft is that **wool is felted and not woven**.

➤ **Perseverance Rover** = Perseverance rover mission is part of NASA's Mars Exploration Program, a longterm effort of robotic exploration of Mars + It aims to look for signs of past microbial life, prepare for future human exploration and collect samples of rock and regolith (broken rock and soil) for possible return to Earth + Recently, it placed a titanium tube containing a rock sample on the surface of Mars. Igneous rock sample was collected from Mars Jezero Crater called South Séítah. Samples are being placed at a location called "Three Forks," first such sample depot on another world.

➤ **Coal Gasification** = process of converting coal into synthesis gas (also called **syngas**), which is a mixture of hydrogen (**H₂**), carbon monoxide (**CO**) and carbon dioxide (**CO₂**) + The syngas technology allows conversion of non-mineable coal/lignite into combustible gases through in situ gasification of the material.

➤ **Windfall Tax** = It is a higher tax levied by the government on specific industries when they experience unexpected and above-average profits + Windfall Tax is imposed on an industry's profits when it experiences a sharp increase in revenue due to unrelated external events + Recently, India reimposed a windfall tax on domestic petroleum crude.

➤ **Valmiki Tiger Reserve (VTR)** = Bihar + It is surrounded by the Royal Chitwan National Park of Nepal in the north and the **river Gandak** on the western side + Rivers Gandak, Pandai, Manor, Harha, Masan, and Bhapsa flow through various parts of the reserve + The forest of this region has a combination of bhabar and terai tracts.

➤ **Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)** = CPTPP is a free trade agreement (FTA) that was agreed in 2018 between 11 countries – Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam + Recently, Britain joined CPTPP as the 12th member + In 2005, a trade agreement between a small group of Pacific Rim countries comprising Brunei, Chile, New Zealand, and Singapore led to the formation of Trans Pacific Partnership (TPP) consisting of 12 nation-states. After the withdrawal of the US, the remaining eleven signatories, known as the TPP-11, continued talks and their efforts led to the formation of CPTPP + India did not join CPTPP as it seeks to place greater labor and environmental standards on its other partners and CPTPP draft includes narrowly detailed qualifications on standards for investment protection, provisions to protect the host state's right to regulate, and the imposition of detailed transparency requirements + Please Note: All 11 countries of CPTPP are also members of the Asia-Pacific Economic Cooperation (APEC)

➤ **Hampi** = Traditionally known as **Pampakshetra of Kishkindha**, Hampi is located in central Karnataka on the banks of the **Tungabhadra River** + **UNESCO World Heritage Site** + It is renowned for its historical and archaeological significance, as it was once the **capital** of the

Vijayanagara Empire, one of the greatest Hindu empires in South India, which thrived from the 14th to the 16th century + Tungabhadra River flows through Hampi + It was the last capital of the last great Hindu Kingdom of Vijayanagar + In 1336 CE, the Vijayanagara Empire arose from the ruins of the Kampili kingdom + It grew into one of the famed Hindu empires of South India that ruled for over 200 years.

➤ **Hoolock Gibbons** = Native to eastern Bangladesh, Northeast India and Southwest China + The tailless Hoolock Gibbon is the only ape found in India + In the areas of high tree canopies, the gibbons swing from branch to branch + They cannot adapt to living on the ground and cannot bear the high temperatures brought about by the loss of green cover + The Hoolock Gibbon is categorized into two types:

- **Western hoolock gibbon** - It inhabits in all the states of the north-east, restricted between the south of the Brahmaputra River and east of the Dibang River + Endangered.
- **Eastern hoolock gibbon** - It inhabits specific pockets of Arunachal Pradesh and Assam in India, and in southern China and north-east Myanmar outside India + Vulnerable + In India, both the species are listed on Schedule 1 of the Wildlife Protection Act 1972

➤ **Exercise Nomadic Elephant** = A bilateral joint military exercise between India and Mongolia at Ulaanbaatar + It is the 15th edition of bilateral joint military exercise + It is an annual training event with Mongolia which is conducted alternatively in Mongolia and India.

➤ **Cicada** = Cicadas are hemipteran insects known for their loud, complex and species-specific acoustic signals or songs + The generic diversity of cicadas in India and Bangladesh ranks the highest in the world, followed by China + Most cicadas are canopy dwellers and are found in natural forests with large trees + Scientists divide the over 3,000 cicada species into two groups: annual and periodical. Annual cicadas emerge from the ground at different times each summer + The insect species that has now been named as Purana cheeveda (after its Malayalam name Cheevedu) used to be mistaken for Purana tigrina, a species that was first described in Malaysia in 1850.

➤ **Pilot Whales** = Despite their name, pilot whales are one of the largest members of the dolphin family. They belong to the dolphin family Delphinidae + Pilot whales are so named because it was once believed that each observed group was navigated by a pilot or leader + There are two species of pilot whales: Short finned pilot whales, which are mainly found in tropical and warm-temperate regions, and long-finned pilot whales, which inhabit colder waters + IUCN Status of both: Least Concern + Seventy-eight long-finned pilot whales, a species of oceanic dolphins, were slaughtered near the capital of Faroe Islands recently + Please Note: The Faroe Islands are an autonomous territory of Denmark. It is located in between the Norwegian Sea and the North Atlantic Ocean.

➤ **Northern Interaction-2023** = This is the name of the military drill organized by China + between China and Russia

➤ **Gambusia Fish** = It is also known as mosquito fish, is widely used as a biological agent for controlling mosquito larvae + It is native to the waters of the south-eastern United States + It has been a part of mosquito-control strategies for over a century in various parts of the world, including India + Also, it has been part of various malaria control strategies in India since 1928, including the Urban Malaria Scheme + The International Union for Conservation of Nature declare Gambusia one of the 100 worst invasive alien species in the world + Recently, the Andhra Pradesh government has released approximately 10 million Gambusia fish into the state's water bodies to combat mosquito-borne diseases like Malaria and Dengue.

➤ **Crimean-Congo Haemorrhagic Fever (CCHF)** = It is a viral haemorrhagic fever usually transmitted by ticks + It can also be contracted through contact with viraemic animal tissues (animal tissue where the virus has entered the bloodstream) during and immediately post-slaughter of animals + The disease was first detected among soldiers in the Crimean Peninsula

(near the Black Sea) in 1944 + In 1969, it was found that an ailment identified in the Congo Basin was caused by the same pathogen. Thus, the disease was named the Crimean-Congo haemorrhagic fever. Its outbreak constitute a threat to public health services as the virus can lead to epidemics, has a high case fatality ratio (10–40%) + There is no vaccine for the virus in either humans or animals, and treatment generally consists of managing symptom.

- **National Multidimensional Poverty Index** = It is prepared based on the latest National Family Heath Survey of 2019-21 and is the second edition of the National Multidimensional Poverty Index (MPI) + Totally 12 parameters of health, education and standard of living are examined in the report. These include nutrition, child and adolescent mortality, maternal health, years of schooling, school attendance, cooking fuel, sanitation, drinking water, electricity, housing, assets, and bank accounts + The report follows Alkire-Foster methodology developed by its technical partners -- the Oxford Poverty and Human Development Initiative (OPHI) and United Nations Development Programme (UNDP) + According to the 'National Multidimensional Poverty Index: A Progress Review 2023, India has registered a significant decline of 9.89 percentage points in the number of multidimensionally poor, from 24.85% in 2015-16 to 14.96% in 2019-2021.

- **BIMSTEC Foreign Ministers' Meet** = The first-ever Foreign Ministers' meeting of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) recently began in Bangkok + (BIMSTEC = Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) + involving a group of countries in South Asia and South East Asia(Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, Thailand) + A BIMSTEC free trade agreement is under negotiation + Leadership is rotated in alphabetical order of country names + The permanent secretariat is in Dhaka(The organisation did not even have a secretariat until 2014) + founded in 1997 with BIST(Bangla, India, srilanka, thailand) + Bhutan and Nepal joined in 2004 + meeting took place after 4 years in Nepal(Kathmandu)(4th Summit) + leaders of BIMSTEC nations have held summits just four times in 22 years + One of BIMSTEC's two founding principles is: "Cooperation within BIMSTEC will constitute an addition to and not be a substitute for bilateral, regional or multilateral cooperation involving the Member States." + Its official literature describes it as a bridge between South and South East Asia" and a "platform for intra-regional cooperation between SAARC and ASEAN [Association of Southeast Asian Nations] members + Last Year, BIMSTEC Secretariat has finalized BIMSTEC charter after 23 years of its inception. In absence of a dedicated charter, BIMSTEC was running with the spirit of Bangkok Declaration of 1997.)

- **Rudragiri Hillock** = Recently, a fascinating combination of prehistoric rock paintings from the Mesolithic period and exquisite artwork from the Kakatiya dynasty were discovered in the Rudragiri hillock + Located in Guntur district of Andhra Pradesh + It is nestled amidst the Eastern Ghats + These shelters served as living quarters for people during the Mesolithic age around 5000 B.C and they bear witness to the luminous rock paintings of that era + Two natural caves at the southern end of the hillock also exhibit exceptional murals from the renowned Kakatiya kingdom.

- **Gharial** = It is a fresh-water crocodile which lives in deep fast-flowing rivers + Compared to alligators and crocodiles, a Gharial has a very long and narrow snout (instead of a broad snout) + Globally Gharial is found only in India and Nepal + In India their major population occur in three tributaries of the Ganga River: the Chambal and the Girwa Rivers in India and the Rapti-Naryani River in Nepal + The Gharial reserves of India are located in three States – Uttar Pradesh, Madhya Pradesh and Rajasthan + IUCN:Critically endangered + Wildlife (Protection) Act, 1972: Schedule I + CITES: Appendix I.

- **DPT3 Vaccine** = DPT vaccine is a class of combination vaccines against three infectious diseases in humans: diphtheria, pertussis (whooping cough), and tetanus + The vaccine

components include diphtheria and tetanus toxoids and either killed whole cells of the bacterium that causes pertussis or pertussis antigens + The primary dose of DPT provided as part of pentavalent vaccine and 2 booster doses are given at 16 -24 months and 5-6 years, respectively + According to the WHO and UNICEF estimates for national immunization coverage for 2022, the coverage rate for DPT3, the third dose of diphtheria, pertussis and tetanus vaccines, in India rose to an all-time of 93% in 2022.

- **Srivilliputhur Megamalai Tiger Reserve (SMTR)** = It is spread across the districts of Theni, Virudhunagar and Madurai in Tamil Nadu + It lies in the Western Ghats region + It was formed in 2021 by combining Grizzled Squirrel Wildlife Sanctuary and Megamalai Wildlife Sanctuary.
- **Henley Passport Index 2023** = Henley Passport Index is the original, authoritative ranking of all the world's passports according to the number of destinations their holders can access without a prior visa + It is published by Henley & Partners, a global citizenship and residence advisory firm, in partnership with the International Air Transport Association (IATA) + The index includes 199 different passports and 227 different travel destinations + The index is based on exclusive data from the International Air Transport Association (IATA) and enhanced by Henley & Partners' research team + Singapore has topped the passport rankings with visa-free access to 192 global destinations + India has climbed seven places to 80th rank from 87 last year.
- **BepiColombo Mission** = BepiColombo is a joint European Space Agency (ESA) and Japan Aerospace Exploration Agency (JAXA) mission to Mercury + The mission was named after Giuseppe "Bepi" Colombo, an Italian mathematician and engineer who made significant contributions to the understanding of Mercury's orbit + Launched on October 20, 2018, BepiColombo is an ambitious and complex mission designed to study Mercury's surface, composition, magnetic field, and its interaction with the solar environment.
- **Picolinic Acid** = It is a pyridinemonomocarboxylic acid in which the carboxy group is located at position 2 + It is an intermediate in the metabolism of tryptophan + Recently, a new study by researchers at the Indian Institute of Science (IISc.) and collaborators has revealed that picolinic acid, a natural compound produced by mammalian cells, can block several viruses, including those responsible for SARS-CoV-2 and influenza A
- **Bura Chaporí Wildlife Sanctuary** = Located on the southern bank of river Brahmaputra in Assam + It is a part of the Laokhowa-Burachaporí eco-system + It comprises of a mosaic of wet alluvial grassland, riparian and semi-evergreen forests dotted by wetland and river systems + It is home to the Great Indian one-horned rhinoceros, tiger, leopard, wild buffalo, hog deer, wild pig, and elephants. It includes the highly endangered Bengal Florican.
- **Bacteriophages** = It is also called phage or bacterial virus, any of a group of viruses that infect bacteria + It was discovered independently by Frederick W. Twort in Great Britain (1915) and Félix d'Hérelle in France (1917) + D'Hérelle coined the term bacteriophage, meaning "bacteria eater," to describe the agent's bactericidal ability + Thousands of varieties of phages exist, each of which may infect only one type or a few types of bacteria or archaea. Phages are classified in a number of virus families; some examples include Inoviridae, Microviridae, Ravidiviridae, and Tectiviridae + Bacteriophages are harmless to human cells as they do not recognize them as their bacterial prey. They work by hunting down bacteria and attaching themselves to the surface of a bacterial cell, before injecting viral DNA material into the cell.
- **Zombie Fire** = It is a fire from a previous growing season that can smoulder under the ground which is made up of carbon-rich peat + These smouldering fires also produce more smoke because of their lower temperature of combustion + As global temperatures rise, fires are also spreading farther north and into the Arctic, which is causing an increase in "zombie fires."
- **Panel of Vice-Chairpersons** = Under the Rules of Rajya Sabha, the Chairman nominates from amongst the members a panel of vice-chairpersons + Any one of them can preside over the House in the absence of the Chairman or the Deputy Chairman + He/she has the same powers

as the Chairman when so presiding + He/she holds office until a new panel of vice-chairpersons is nominated + When a member of the panel of vice chairpersons is also not present, any other person as determined by the House acts as the Chairman + It must be emphasised here that a member of the panel of vice chairpersons cannot preside over the House, when the office of the Chairman or the Deputy Chairman is vacant + During such time, the Chairman's duties are to be performed by such member of the House as the president may appoint for the purpose. The elections are held, as soon as possible, to fill the vacant posts.

- **STAR-C Initiative** = The initiative is run by the International Solar Alliance in partnership with the United Nations Industrial Development Organisation (UNIDO) + The project is also funded by France + It aims to create a strong network of institutional capacities within ISA member states to enhance quality infrastructure for the uptake of solar energy products and services + The programme aims to boost solar power ecosystems in the poorest countries.
- **White's Seahorse** = It is commonly seen holding onto the nets of swimming enclosures. The species was named after John White, Surgeon General to the First Fleet. Seahorses are often considered a flagship species for conservation. Male seahorses can be recognised by the presence of a pouch below the abdomen which is absent in females. It is usually very well camouflaged in various shades of brown, grey and black + These are endemic to Australia + IUCN: Endangered.
- **Cymbidium Lancifolium** = Recently, an extremely rare and terrestrial orchid species Cymbidium lancifolium was discovered in the Chopta valley of the Western Himalayan region of Uttarakhand + This is one of the beautiful species of Cymbidium, also known as Lance leafed Cymbidium + This species is found naturally in India in Himalayas, Assam, Sikkim, Nepal, Bhutan, China, Taiwan, Japan and many of the SE Asian countries + They are highly valued in horticulture and are commonly sold as cut flowers and potted plants on a commercial scale.
- **E. Coli** = Escherichia coli, commonly known as E. coli, is a type of bacteria that can be found in the intestines of humans and animals + coli is a rod-shaped bacterium of the Enterobacteriaceae family + While most strains of E. coli are harmless and even beneficial, some strains can cause illness and infections + Some kinds of E. coli can cause diarrhoea, while others cause urinary tract infections, respiratory illness and pneumonia, and other illnesses + Transmission: Pathogenic E. coli can be transmitted to humans through contaminated food, water, or contact with faecal matter from infected individuals or animals.
- **Tiger Orchid** = It is the largest orchid species in the world + It is called Tiger Orchid because of its splendid flowers which sport striking brown spots against a yellow backdrop, bringing to mind tigers + CITES : Appendix II + They grow in Terrestrial (Primary Rainforest, Freshwater Swamp Forest, Riverine) habitats + Distribution: Malaysia, Indonesia, Thailand, Myanmar and Laos.
- **Ludwigia Peruviana** = Recently, wildlife scientist said that Ludwigia Peruviana, an invasive weed threatening the elephant habitats and foraging areas in Valparai, Tamil Nadu + It is popularly called primrose willow, Ludwigia Peruviana, is a native of Central and South America + It is an aquatic plant, which is now challenging the existence of local vegetation in various swampy areas around the world + It is among the 22 priority invasive plants in Tamil Nadu.
- **Airbus A400M** = European-built military transport aircraft + The aircraft is manufactured by Airbus Defence and Space, a division of the European aerospace and defence firm Airbus + It combines the capability to carry strategic loads with the ability to deliver even into tactical locations with small and unprepared airstrips. It can carry large cargo, vehicles, troops, and paratroopers or be configured for medical evacuation (MEDEVAC) missions.
- **Long March 10 Rocket** = It is China's new carrier rocket designed for manned moon landing missions. The rocket will be capable of ferrying a crew module along with a lunar lander to

Earth-Moon transfer orbit + Please Note: **Tiangong** (Chinese for "Heavenly Palace") is a modular space station being constructed by the China National Space Administration (CNSA). It is the first space station built by China. Tiangong is currently in low Earth orbit (LEO), and it is expected to be operational until 2028. It is a three-module space station. The core module **Tianhe** launched in April 2021, followed by the **Wentian** and **Mengtian** experiment modules in 2022.

- **Silver Cockscomb** = It is a short-lived 50-60 cm-tall plant considered as a **weed** + Also known as lagos spinach which belongs to the Amaranthaceae family, which includes economically important plants like spinach (*Spinacia oleracea*), beetroot and quinoa + The plant is known as *Celosia argentea*, **kurdu in Marathi** and **pannai keerai in Tamil** + It grows well even on fallow land and in drought-like conditions + **Soliga tribal community** uses silver cockscomb, which is often considered to be a weed but has been discovered to have advantages + Soliga are an indigenous tribe of Karnataka. They reside in the peripheral forest areas near **Biligiri Rangana Hills** and **Male Mahadeshwara** in the Chamarajnagar district of Karnataka. **They are the first tribal community living inside the core area of a tiger reserve in India to get their forest rights officially recognised by a court of law.**
- **Fluorine** = Fluorine comes from a calcium salt called calcium fluoride, or fluorspar + Fluorspar is mined and then treated with sulphuric acid at a high temperature to release hydrogen fluoride (HF) + Hydrogen fluoride is then made to react with other compounds to create fluorochemicals + Fluorine is a highly reactive element used to make fluorochemicals, It is used to produce plastics, agrochemicals, lithium-ion batteries, and drugs.
- **DS-SAR Satellite** = It is recently launched through **PSLV-C56** vehicle from the Satish Dhawan Space Centre in Sriharikota + It is developed under a **partnership between DSTA** (representing the Government of **Singapore**) and **ST Engineering** + It will be used to support the satellite imagery requirements of various agencies within the Government of Singapore + ST Engineering will use it for multi-modal and higher responsiveness imagery and geospatial services for their commercial customers + It carries a Synthetic Aperture Radar (SAR) payload developed by Israel Aerospace Industries (IAI) + This allows the DS-SAR to provide for all-weather day and night coverage and is capable of imaging at 1m resolution at full polarimetry.
- **Fragile X Syndrome** = It is an inherited genetic disease passed down from parents to children that causes intellectual and developmental disabilities + It is also known as **Martin-Bell syndrome** + It is the most common hereditary cause of mental disability in boys + It's less common in girls, affecting about 1 in every 8,000 + It cannot be cured. Treatment is aimed at helping people with the condition learn key language and social skills + The peculiar quality of this disease is that if it is inherited by the father, then it will only affect the daughter, but if it is inherited by the mother, then it can affect both genders + It is caused by a defect in the **FMR1 gene located on the X chromosome**. The defect, or mutation, on the FMR1 gene prevents the gene from properly making a protein called the fragile X mental retardation 1 protein.
- **Mhadei Wildlife Sanctuary** = Goa + The most prominent are the **Vazra Sakla Falls** and the **Virdi Falls**.
- **International Seabed Authority (ISA)** = ISA is an **autonomous** international organization mandated by the United Nations Convention on the Law of the Sea to protect the seabed for the shared benefit of humankind + HQ: **Jamaica, est. 1994** + It is an intergovernmental body of 167 member states and the European Union established under the 1982 UN Convention on the Law of the Sea and its 1994 Agreement on Implementation + The **international seabed** is the area that lies beyond the limits of national jurisdiction and **represents around 50%** of the **total area of the world's oceans**.
- **Cantonment Board** = It is an organization established to administer and manage the civilian population living in cantonment areas + It operates in accordance with the provisions of the

Cantonment Act of 2006 and falls under the jurisdiction of the Union Defence Ministry + The boards comprise elected representatives as well as ex-officio and nominated members as per the Cantonments Act, 2006 + A cantonment board consists of **eight elected members, three nominated military members, three ex-officio members** (station commander, garrison engineer and senior executive medical officer), and one representative of the **district magistrate** + There are a total 66 cantonment boards present in India + A cantonment differs from a military station—the latter is exclusively devoted to the use and accommodation of military personnel and is established under an executive order. The cantonment, on the other hand, is an area that comprises both military and civilian populations.

➤ **Asia Pacific Cultural Heritage Award** = UNESCO Asia-Pacific Awards for Cultural Heritage Conservation is supported by a partnership between UNESCO and Ng Teng Fong Charitable Foundation since 2021 + Since 2000, UNESCO Asia-Pacific Awards for Cultural Heritage Conservation have been recognizing the achievement of the private sector and public-private initiatives in successfully conserving or restoring structures, places and properties of heritage

value in the region + UNESCO introduced the new category, 'Special Recognition for Sustainable Development', in 2020, together with an updated set of Awards Criteria + Recently, the heritage **Byculla Railway station** (Mumbai, Maharashtra) which has been restored to its original glory, received the UNESCO award. Byculla Railway station was originally built in 1853. The first train of the country passed through Byculla station almost one-and-a-half centuries ago.

➤ **African Union (AU)** = African Union (AU) is a continental body consisting of the 55 member states that make up the countries of the African Continent + It was officially launched in 2002 and replaced its predecessor, the **Organization of African Unity (OAU)**, which was founded in 1963 + It aims to strengthen political, economic, and social integration among African countries, with a vision of achieving an integrated, prosperous, and peaceful Africa + **Headquarters: Addis Ababa, Ethiopia** + Recently, India's G-20 Sherpa recently said that the Indian Prime Minister's proposal to make the African Union a permanent member of the G-20 has received an overwhelming response from the grouping.

➤ **Krishnaraja Sagar (KRS) Dam** = It is located below the confluence of river **Kaveri** with its tributaries, **Hemavati and Lakshmana Tirtha**, in the district of Mandya in Karnataka + type of gravity dam + The dam was constructed during the rule of the **Maharaja of Mysore, Krishnaraja Wadiyar IV**, and it was named in his honour. The construction of the KRS Dam began in 1911 and it was completed in 1931 + The dam was designed by Sir M. Visvesvaraya, a famous Indian engineer.

➤ **Meri Maati Mera Desh Campaign** = Announced Recently + Under this campaign soil collected from different parts of the country in August will be used to develop a garden along the **Kartavya Path in Delhi** + The five-point agenda includes the installation of a **shilaphalakam** (memorial plaque), as per specifications, bearing the "names of those who have made the supreme sacrifice" + Work for the shilaphalakam may be executed through the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), leveraging local materials and resources.

➤ **Scrub Typhus** = Scrub typhus is a life-threatening infection caused by **Orientia tsutsugamushi** bacteria which is a major public health threat in South and Southeast Asia + It is spread to people through bites of infected chiggers (larval mites) + The most common symptoms of scrub typhus include fever, headache, body aches, and sometimes rash + Scrub typhus should be treated with the antibiotic doxycycline. **Doxycycline** can be used in persons of any age + There is no vaccine available for this disease + Recently, the **Kerala Health department** has issued an alert against scrub typhus as fresh cases have been reported in Alappuzha + Please Note: **Typhus fevers** are a group of diseases **caused by bacteria** that include **epidemic typhus, scrub typhus, and murine typhus**.

- **Epidemic typhus** is caused due to *Rickettsia prowazeki* and spread by body lice.
- **Scrub typhus** is caused due to *Orientia tsutsugamushi* and spread by chiggers.
- **Murine typhus** is caused due to *Rickettsia typhi* spread by fleas.

➤ **Sea Grasses** = Seagrasses are flowering plants that grow submerged in shallow marine waters like bays and lagoons + They have roots, stems and leaves, and produce flowers and seeds + They are considered to be 'Ecosystem Engineers' + They inhabit all types of substrates (layers) from mud to rock and they are found extensively in muddy and sandy substrates + Seagrass reproduce through both sexual and asexual methods + Seagrass reproduce through both sexual and asexual methods + It occurs all along the coastal areas of India and are abundant in the Palk Strait and Gulf of Mannar in Tamil Nadu, however threatened now + They are found on all continents except Antarctica.

➤ **Conjunctivitis** = Conjunctivitis, commonly known as Pink Eye, is an infection or inflammation of the transparent membrane that covers the eyelid and eyeball. This membrane is called the conjunctiva + When small blood vessels in the conjunctiva become swollen and irritated, they're more visible. This is what causes the whites of the eyes to appear reddish or pink + It can be caused by viruses, bacteria or by allergies. Both bacterial and viral conjunctivitis are highly contagious, while allergic conjunctivitis is not + It usually occurs through direct or indirect contact.

➤ **Ureilite** = 'Ureilites' are a rare class of primitive meteorites that constitute just a tiny fraction of meteorites on Earth + It is named after the locality where the first specimen was discovered, the Novo Urei village in Russia + They consist of silicate rock, mostly olivine and pyroxene, interspersed with less than 10% of carbon (diamond or graphite), metal sulphides and a few fine-grained silicates + Ureilites are considered primitive meteorites because their composition closely resembles the material from which the solar system formed + In a recent discovery, a collaborative team of scientists from Allahabad University and the University of Bern, Switzerland, revealed that the Dhala crater resulted from the collision of an exceptionally rare and ancient meteorite, known as Ureilite + **(Dhala Crater** = It is the oldest and the largest impact crater in India + Madhya Pradesh + It is a massive 11 km in diameter, making it the largest in Asia)

➤ **Markarian 421** = It is a supermassive black hole firing a jet of high-energy particles aimed directly at Earth + It is about 400 million light-years away from the earth + It is located in the constellation Ursa Major + Recently, NASA's IXPE Mission unveils twisted mysteries of the Supermassive Black Hole Markarian 421 + Imaging X-ray Polarimetry Explorer (IXPE) is an international collaboration between NASA and the Italian Space Agency. It studies the most extreme and mysterious objects in the universe – supernova remnants, supermassive black holes, and dozens of other high-energy objects. It is the first satellite dedicated to measuring polarized X-rays from objects, such as neutron stars and supermassive black holes, to reveal previously hidden details of the universe.

➤ **New Millipede species** = Recently, a new species of millipede has been discovered crawling underneath the city of Los Angeles in the United States + The newly found species is a thread Millipede + Its scientific name is *Illacme socal* + Millipede are member of the arthropod class Diplopoda. They are cylindrical or slightly flattened invertebrates + Their bodies are split into a number of segments, and each segment has two sets of legs that attach to the body's underside.

➤ **INDIAai** = It is the National artificial intelligence Portal of India which was launched on 28th May 2020 + It is a knowledge portal, research organisation, and an ecosystem-building initiative + It stands to unite and promote collaborations with various entities in India's AI ecosystem + It is a joint initiative by the Ministry of Electronics and IT (MeitY), National e-Governance Division (NeGD) and NASSCOM + It is the single central knowledge hub on artificial intelligence and allied fields for aspiring entrepreneurs, students, professionals, academics, and everyone else.

- **World Cities Culture Forum** = Recently, Bengaluru has become the first Indian city to become part of the World Cities Culture Forum (WCCF) + WCCF was founded in 2012 by Justine Simons OBE, London's Deputy Mayor for Culture & the Creative Industries + It is a global network of cities that share research and intelligence, and explore the role of culture in future prosperity + The network currently has 40 cities spanning six continents + World cities culture summit hosted on a rotating basis by city partners, an unprecedented gathering of city leaders sharing ideas and knowledge about culture's role in public policy in a world city context
- **Digital Payment Index** = It has been constructed by the RBI to measure the extent of digitisation of payments across the country + It is based on multiple parameters and reflects the expansion of various digital payment modes accurately + It is a first-of-its kind index to measure the spread of digital payments across the country + The base period of the index is March 2018 + The index has been published on a semi-annual basis from March 2021 onwards with a lag of 4 months.
- **Pedicularis Revealiana** = New Plant Species + Sikkim + Recently, scientists from the Botanical Survey of India (BSI) Prayagraj Centre have discovered a new plant species Pedicularis Revealiana, in the state of Sikkim + It is stout and woody stems, bears minute flowers of pinkish-purple colour + It is a hemiparasitic plant species + perennial herb.
- **International Tiger Day 2023** = Observed globally on July 29 every year + Global Tiger Day, commonly referred to as International Tiger Day, was first established in 2010 during the Saint Petersburg Tiger Summit by nations that are home to tigers + It is celebrated worldwide to promote comprehensive efforts in safeguarding tigers and their natural habitats, fostering harmonious coexistence between humans and tigers.
- **Parkachik Glacier** = Parkachik glacier is one of the largest glaciers in the Suru River valley + Suru River valley is a part of the southern Zanskar Ranges in the western Himalayas + Zanskar is a high altitude semi-desert lying on the Northern flank of the Great Himalayan Range.
- **Blue whale** = Blue whales are the largest animals ever to live on our planet + Whales are at the top of the food chain and have an important role in the overall health of the marine environment + They are found in all oceans except the Arctic Ocean + The average lifespan is estimated at around 80 to 90 years + IUCN: Endangered + Recently, the carcass of a blue whale washed ashore at Meghavaram beach of Santabommali mandal in Srikakulam district of Andhra Pradesh.
- **Hepatitis** = The word hepatitis refers to any inflammation of the liver — the irritation or swelling of the liver cells from any cause + It can be acute (inflammation of the liver that presents with sickness — jaundice, fever, vomiting) or chronic (inflammation of the liver that lasts more than six months, but essentially showing no symptoms) + Hepatitis A is usually a short-term infection and does not become a long-term infection + Hepatitis B and hepatitis C can also begin as short-term infections but in some people, the virus remains in the body, and causes chronic, or lifelong, infection + There are vaccines to prevent hepatitis A and hepatitis B; however, there is no vaccine for hepatitis C + (**World Hepatitis Day** = Observed each year on July 28 as Dr. Baruch Blumberg (1925–2011) was born on this day, who discovered the hepatitis B virus in 1967, and 2 years later, he developed the first hepatitis B vaccine)
- **ULLAS Initiative** = ULLAS (Understanding Lifelong Learning for All in Society) is a transformative initiative launched by the Indian government to promote lifelong learning and bridge the gaps in basic literacy and critical life skills among citizens aged 15 and above + Ministry of Education + It is being implemented through volunteerism + It will serve as a digital gateway for learners to engage in diverse learning resources through the DIKSHA portal of NCERT.
- **Cell-free DNA** = In the human body, most of the DNA in a genome is neatly packed inside cells with the help of specific proteins, protecting it from being degraded. In a variety of

scenarios, some fragments of DNA are ‘released’ from their containers and are present outside the cell, in body fluids. These small fragments of nucleic acids are widely known as cell-free DNA (cfDNA) + **Applications**: One of the most widely used applications of cfDNA has been in **screening foetuses for specific chromosomal abnormalities**, an application known as non-invasive prenatal testing. It is useful tool to **understand human diseases** and to use the knowledge to improve diagnosis, monitoring, and prognosis. It is useful in **understanding why a body is rejecting a transplanted organ**. This **could be used as a biomarker for neurological disorders like Alzheimer’s disease**, neuronal tumours, stroke, traumatic brain injury,

- **Worldcoin Project** = It is an initiative to create a digital network in which everyone can claim some kind of stake, and join the digital economy + Worldcoin is an **iris biometric cryptocurrency** project developed by San Francisco and Berlin-based Tools for Humanity + Founded in 2019 by OpenAI chief executive Sam Altman, Max Novendstern, and Alex Blania + This venture runs on a simple model: allow your eyes to be scanned in order to prove your human uniqueness, and receive some crypto and an ID (called a World ID) in exchange + Using a device called “Orb,” Worldcoin volunteers known as ‘Orb operators’ scan a person’s iris pattern to collect their biometric data and help them get a World ID through the World app.
- **Cocos (Keeling) Islands** = Cocos (Keeling) Islands lie in the eastern Indian Ocean, **northwest** of the **Australian city of Perth** + It comprises of coral atolls and islands, the archipelago includes North Keeling Island and the South Keeling Islands + Recently, an Indian Navy Dornier maritime patrol aircraft and an Indian Air Force (IAF) C-130 transport aircraft visited Australia’s Cocos (Keeling) Islands (CKI).
- **Coco Islands** = Bay of Bengal + **part of the Yangon Region** of Myanmar + It is geologically an **extended division of the Arakan Mountains** or Rakhine Mountains, submerges as a chain of islands in the Bay of Bengal for a long stretch and emerges again in the form of the Andaman and Nicobar Islands. They are part of the same topography as India’s Andaman & Nicobar Islands.
- **Voyager 2 Spacecraft** = NASA + The two-spacecraft Voyager-1 and Voyager-2 missions, were designed to replace original plans for a “Grand Tour” of the planets that would have used four highly complex spacecraft to explore the five outer planets during the late 1970s + Like Voyager 1, Voyager 2 also was designed to find and study the edge of our solar system + Voyager gets its power from a radioisotope thermoelectric generator (RTG) which turns heat from the decay of a radioactive material into electricity + It is the **only spacecraft to study all four of the solar system's giant planets- Jupiter, Saturn, Uranus and Neptune** at close range + It officially entered interstellar space (space between the stars). This space between the stars, is dominated by the plasma that was ejected by the death of nearby giant stars millions of years ago + It was the first human-made object to fly past Uranus in 1986 and Neptune in 1989, making it the only spacecraft to have had a close look of the icy planets.

called **echinocandins**. However, there has been a rise in cases resistant to the main three classes of antifungals available, making it harder to treat patients + Recently, scientists from Delhi University and McMaster University in Canada have made a significant discovery by isolating and studying the first live culture of *Candida auris* from the ear canals of stray dogs in Delhi.

➤ **eDAR Project** = **Integrated Road Accident Database (iRAD) / e-Detailed Accident Report** (eDAR) Project is an initiative of the Ministry of Road Transport and Highways (MoRTH), Government of India + It is funded by World Bank + The project aims to develop an Integrated Road Accident Database (iRAD), to enrich the accident databases from every part of the country + The project would generate various types of insights by analysing the collected road accident data across the country through implementation of data analytics technique.

➤ **Guillain-Barre Syndrome** = It is a rare **autoimmune disorder** where the body's immune system mistakenly attacks the **peripheral nerves** + It is more common in adults and males, but it can affect people of all ages + It is often preceded by an infection. This could be a bacterial or viral infection. The most frequently associated infections include *Campylobacter jejuni*, *Epstein-Barr virus (EBV)*, *cytomegalovirus (CMV)*, and the bacteria responsible for pneumonia and urinary tract infections. It may also be triggered by vaccine administration or surgery + There is no known cure for this syndrome. The most commonly used treatment is intravenous immunoglobulin (IVIG), which is made from donated blood that contains healthy antibodies + Recently, Peru has declared a state of national emergency amid a surge in patient suffering from Guillain-Barré syndrome.

➤ **Lambani Embroidery or Lambani Craft** = It is practised in several villages of **Karnataka** + Lambani embroidery is an intricate form of **textile embellishment** characterised by colourful threads, mirror-work and stitch patterns + The Lambani craft tradition involves stitching together **small pieces of discarded fabric to create a beautiful fabric** + This embroidery had also found a place in the list of products with **Geographic Indication (GI) tag** in the country + Please Note: **Lambani People** are also known as **Banjaras** and most of them are found in Telangana, Andhra Pradesh and Karnataka states in South India.

➤ **Urban 20 (U20) Summit** = It is a city diplomacy initiative launched in 2017, at the One Planet Summit in Paris + It provides a platform for cities from G20 countries to facilitate discussions on various important issues of urban development including climate change, social inclusion, sustainable mobility, and affordable housing, and propose collective solutions + This year it was chaired by the **City of Ahmedabad**.

➤ **Mukurthi National Park** = **Tamil Nadu** + The park is a part of the **Nilgiri Biosphere Reserve**. It is sandwiched between the Mudumalai National Park and the Silent Valley National Park + It was established with the prime motive of conserving its **keystone species – the Nilgiri Tahr** + It is a **UNESCO World Heritage Site** + Pykara and Kundah rivers flow through the park.

➤ **Shelf Cloud** = A “shelf cloud” or “Arcus cloud” generally forms along the **leading edge of thunderstorms** + It is a type of low-lying, horizontal cloud formation characterized by a clearly defined line of solid clouds + It is known for its distinctive wedge-shaped formation. They usually appear as a broad arc across the sky that can sometimes appear to be rotating horizontally + Shelf clouds form **when cold and dense air is forced into a warmer air mass** by **wind**. This rush of cold air often occurs in a thunderstorm’s downdraught, where cold air rushes towards the ground before spreading out to create a gust front + Shelf clouds produced by thunderstorms are always preceded by a rush of dry and cold air ahead of the cloud, with rain arriving after the shelf cloud has passed overhead.

➤ **Kui Language** = Kui (also known as Kandh, Khondi, Khond, Khondo), is a South-Eastern **Dravidian** language spoken by the **Kandha community** + It is primarily spoken in the state of **Odisha** + It is closely related to other languages in the Dravidian family, such as Gondi and Kuki + Kui figures at rank 29 in the 1991 Indian census + Script: Kui is traditionally written using the **Odia script**, which is also used for writing the Odia language + Odisha Cabinet

recently recommended a proposal for inclusion of 'Kui' language in the 8th Schedule of the Indian Constitution.

- **E-Way Bill** = An e-way bill, short form for electronic way bill, is a permit needed for inter-state and intra-state transportation of goods worth more than Rs. 50,000 + It contains details of the goods, the consignor, the recipient and the transporter + It can be electronically generated through the Goods and Services Tax Network (GSTN) + When an e-way bill is generated, a unique E-way Bill Number (EBN) is allocated and is available to the supplier, recipient, and the transporter + E-way bill must be raised before the goods are shipped + The e-way bill's validity varies depending on the distance that the goods have to travel. Typically, the bill's validity is one day for every 100 km of movement of goods + Goods excluded from e-way bill's ambit: Perishable items (such as meat, milk and milk products and fruits and vegetables), gold and silver jewellery, cooking gas cylinders, raw silk, wool and handlooms.
- **Salsola Oppositifolia Desfontani** = Perennial Shrub that grows in saline, arid, to semi-arid environments of Gujarat's Kutch district (Khadir Bet and Bela region) + Recently discovered new plant species + It is a succulent shrub and a halophyte plant -a plant adapted to growing in saline conditions + This species, earlier known from Italy, Northern Africa, Palestine, Spain and Western Sahara + It is the 6th species of Salsola genus to be discovered in India.
- **International Biology Olympiad** = It is a biological Olympiad for pre-university students under the age 20, and is one of the most well-known International Science Olympiads + The first IBO was held in Czechoslovakia in 1990, and it has since been held annually + Recently, India topped the medals tally at the 34th International Biology Olympiad (IBO) 2023 which was held in Al Ain, UAE + Every year it is being organised by a different country + India organized this Olympiad in 2008.
- **Ambergris** = Floating Gold or Ambergris (commonly identified as a lump of vomit), is a substance extracted from the bile duct in the intestines of sperm whales + It is a waxy, solid and inflammable substance + It is produced by about one in every hundred sperm whales + It has predominantly been employed in the creation of perfumes and fragrances. Ambergris has a woody scent like sandalwood but also contains ambrein, an odorless alcohol that can fix and extend the life of scents, hence its popularity among perfumers.
- **Hwasong-18** = North Korea + Intercontinental Ballistic Missile (ICBM) + It is North Korea's first ICBM to use solid-fuel.
- **Non-Fungible Tokens (NFTs)** = NFTs are unique cryptographic tokens that exist on a blockchain and cannot be replicated + They can represent digital or real-world items like artwork, photograph, song, video, real estate, individuals' identities, property rights, and more. Thus, NFTs are assets that have been tokenized via a blockchain + They are assigned unique identification codes and metadata that distinguish them from other tokens + The term 'non-fungible' simply means that each token is different as opposed to a fungible currency such as money (a ten-rupee note can be exchanged for another and so on) + NFTs can be traded and exchanged for money, cryptocurrencies, or other NFTs—it all depends on the value the market and owners have placed on them + NFT transactions are recorded on blockchains, which is a digital public ledger, with most NFTs being a part of the Ethereum blockchain.
- **Atlantic Menhaden** = It is a commercially important Atlantic Ocean fish, also known as Fatback, Bunker, Pogie + They are found in coastal and estuarine waters from Nova Scotia to northern Florida + They are filter feeders, primarily consuming phytoplankton and zooplankton in the water column + Recently, researchers said that overfishing of the Atlantic menhaden are at the root of the declining reproductive rates of ospreys(bird) at Mobjack Bay, an inlet at the southern end of the Chesapeake Bay (USA).
- **Chavin de Huantar** = Located in Lima, Peru + Chavin de Huantar archaeological site is among the culture's most important centres, thriving from around 1,500-550 B.C + It is one of

the earliest and best-known pre-Columbian sites + It was declared as the UNESCO world heritage site in 1985.

- **Tunicates** = These are commonly called **sea squirts** which are a group of **marine animals** + About 3,000 species of tunicate exist in the world's oceans, living mostly in shallow water + They are a species of marine invertebrates with an evolutionary history from at least 500 million years ago + Researchers are interested in them as they are the closest relatives of vertebrates, which includes fish, mammals, and people + recently, The new fossil, named Megasiphon thylakos, revealed that ancestral tunicates lived as stationary, filter-feeding adults and likely underwent metamorphosis from a tadpole-like larva.
- **Jerdon's Babbler** = Jerdon's babbler is a **passerine bird** native to wetlands and grasslands of the **Indian subcontinent** + Geographic Distribution: Bangladesh, India, Myanmar, Nepal, Pakistan + It lives all-year-round near river courses, where it inhabits dense reedbeds and tall grasslands + IUCN Red List: Vulnerable + Recntly, A rare and globally endangered bird species 'Jerdon's Babbler' was recently spotted in the buffer zone of the Dudhwa Tiger Reserve (DTR).
- **Grand Cross of the Legion of Honour** = Awarded by **France** + Recently given to Indian PM + There is no material or financial benefit attached to the award.
- **Rubber Board of India** = It is a **statutory organisation** constituted under the **Rubber Act, 1947** and functions under the administrative control of the **Ministry of Commerce and Industry** + The Board is headed by a Chairman appointed by the Central Government and has 27 members representing various interests of the natural rubber industry + The Board's **headquarters** is located at **Kottayam in Kerala** + It also maintains statistical data of rubber, takes steps to promote marketing of rubber and undertake labour welfare activities.
- **Duchenne's Muscular Dystrophy** = It is a rare **genetic disorder** + It was first described by the French neurologist Guillaume Benjamin Amand Duchenne in the 1860 + It is characterized by **progressive muscle degeneration** and weakness due to the **alterations of a protein** called **dystrophin** that helps keep muscle cells intact + It is a multi-systemic condition, affecting many parts of the body, which results in deterioration of the skeletal, heart, and lung muscles + The **dystrophin gene is found on the X-chromosome**, it primarily **affects males**, while **females are typically carriers** + Presently available treatments are gene therapy, exon skipping, stop codon read-through and gene repair
- **Association of World Election Bodies (A-WEB)** = It is the largest association of Election Management Bodies (EMBs) worldwide + It was founded in 2013 in Seoul, Republic of Korea + Theme of 2023 meeting: "A global view on the challenges of regional elections 2023" + It consists of 119 EMBs as Members & 20 Regional Associations/Organisations as Associate Members + ECI took over as Chairperson for 2019-22 term and is presently a member of its Executive Board for 2022-24 + In India A-WEB Centre has been established at New Delhi for documentation and research for sharing the best practices and training and capacity building of officials of A-WEB member.
- **Airbus C-295 Aircraft** = It is a medium tactical transport aircraft that was designed and initially manufactured by the Spanish aerospace company CASA + The C-295 is an aircraft of 5-10 tonne capacity used for tactical transport of up to 71 passengers or 50 paratroopers, and for logistic operations to locations that are not accessible by current heavier aircraft + It will replace the Indian Air Force's ageing fleet of Avro-748 planes + It can operate from short or unprepared airstrips + It will be installed with the indigenous Electronic Warfare Suite + Recently, Airbus and Tata Advanced Systems Limited (TASL) are working together to establish an aircraft manufacturing facility in Vadodara (Gujarat).

Vision-July(No Repetition)

Topics already covered in The Hindu section are NOT repeated

- **Uniform Civil Code (UCC)** = UCC refers to same set of civil laws applicable to all citizens of India in their personal matters such as marriage, divorce, custody, adoption and inheritance + The provisions for Uniform Civil Code come under Article 44 (Directive Principles of State Policy) of the Constitution + Different religious communities are currently governed by a system of personal laws, which have been codified over the years through various pieces of legislation + Goa is, at present, the only state in India with a UCC (Portuguese Civil Code of 1867).
- **Directorate of Enforcement (ED)** = It is a financial investigation agency under Department of Revenue, Ministry of Finance + It was established in 1956 with its Headquarters at New Delhi + It is responsible for enforcement of Foreign Exchange Management Act, 1999 (FEMA), certain provisions under PMLA, 2002, Fugitive Economic Offenders Act, 2018 and Conservation of Foreign Exchange and Prevention of Smuggling Activities Act, 1974 (COFEPOSA) + FEMA is a civil law while PMLA is criminal law.
 - **Appointment of Director of ED** = ED director is appointed as per provisions of the CVC Act 2003 + Tenure should be "not less than two years," and any transfer has to be sanctioned by the appointing committee chaired by CVC + The mandatory two-year appointment period is followed by a maximum of three annual extensions under the Central Vigilance Commission Act of 2021 + Recently, Supreme Court declared the third extension given to the Directorate of Enforcement (ED) chief invalid + SC upheld the amendment to the Central Vigilance Commission (Amendment) Act, 2021, Delhi Special Police Establishment (Amendment) Act, 2021, and the Fundamental (Amendment) Rules, 2021. Amendments allow the tenures of Directors of the Central Bureau of Investigation and the ED a maximum of three annual extensions + However, the SC ruled that the current ED chief's term extension was unlawful for violating the mandate of the Supreme Court's 2021 judgment, wherein the court had barred further extensions.
- **Cooperative Societies** = A co-operative society is a voluntary association of individuals having common needs who join hands for the achievement of common economic interest + Cooperatives are a state subject, but there are many societies such as those for sugar and milk, banks, milk unions etc whose members and areas of operation are spread across more than one state + These inter-state Cooperatives are governed under Multi-State Cooperative Societies Act 2002 + Administrative and financial control of these societies is with the central registrar + Maharashtra has the highest number at 567, followed by Uttar Pradesh (147) and New Delhi (133) + Recently, Multi-State Cooperative Societies (Amendment) Bill, 2022 was passed by both the houses to amend the Multi-State Co-operative Societies (MSCS) Act, 2002.
 - **Multi-State Cooperative Societies Act, 2002** = Aims to consolidate and amend the law relating to cooperative societies, with objects not confined to one State and serving the interests of members in more than one State + The Act applies to all cooperative societies, with objects not confined to one State + All MSCS shall be registered under the Act through a Central Registrar (appointed by the Central Government.) + Every multi-state cooperative society may make its bye-laws consistent with the provisions of this act for its internal governance + Central Registrar has to prepare a scheme of amalgamation or reorganisation of a cooperative bank. This is done on the direction of the Central Government, with prior approval of RBI and in accordance with the Banking Regulation Act, 1949.
 - **Multi-State Cooperative Societies (Amendment) Bill, 2022** = The bill has provisions including the establishment of a Cooperative Election Authority, creation of a Cooperative Rehabilitation Reconstruction and Development Fund, appointment of

cooperative ombudsman and information officers, and representation of women and SC/ST members on cooperative society boards + It establishes the Co-operative Election Authority to conduct and supervise elections to the boards of multi-state co-operative societies + A Co-operative Rehabilitation, Reconstruction, and Development Fund will be established for the revival of sick multi-state co-operative societies. The Fund will be financed through contributions by profitable multi-state co-operative societies. A company constituted under the Companies Act, 2013 is not required to contribute towards the revival of sick companies + The Bill allows state co-operative societies to merge into an existing multi-state co-operative society, subject to the respective state laws.

97th Constitutional Amendment Act 2011 = It established the right to form cooperative societies as a fundamental right (Article 19) + It included a new Directive Principle of State Policy on the Promotion of Cooperative Societies (Article 43-B) + It added a new Part IX-B to the Constitution titled "The Co-operative Societies" (Articles 243-ZH to 243-ZT) + It authorizes the Parliament to establish relevant laws in the case of multi-state cooperative societies (MSCS) and state legislatures in the case of other cooperative societies + Please Note: SC, in Union of India vs Rajendra Shah and others, 2021 stated that Part IXB of Indian Constitution applied only to Multi-State Cooperative Societies.

➤ Cinematography (Amendment) Bill, 2023 = Recently, both the houses passed the Cinematography (Amendment) Bill, 2023 + The proposed amendments aim to introduce new certification categories + Bill introduces three age-based certifications under 'UA' category — 'UA 7+', 'UA 13+' and 'UA 16+'. These are only recommendatory + Films with an 'A' or 'S' certificate will require a separate certificate for exhibition on television, or any other media prescribed by the central government + Certificates will be perpetually valid as opposed to the present validity of 10 years + Bill omits section 6(1) of the Act as directed by Supreme Court in Union of India vs KM Shankarappa Case, 2000 which states that Centre cannot exercise revisional powers on films already certified by the CBFC + The Bill prohibits the unauthorised recording and unauthorised exhibition of films and makes it a punishable offence under the provisions of Copyright Act, 1957.

➤ Central Board of Film Certification(CBFC) = CBFC is a statutory body under the Ministry of Information and Broadcasting + Headquarters: Mumbai (with 9 regional centers) + CBFC's function is to regulate the public exhibition of films under the provisions of the Cinematograph Act 1952 + Films can be publicly exhibited in India only after they have been certified by the Central Board of Film Certification + The Board consists of non-official members and a Chairman (all of whom are appointed by Central Government) and functions with headquarters at Mumbai + Please note: Film Certification Appellate Tribunal (FCAT) was abolished in 2021 and appeals can be made only in a High Court. Earlier an applicant aggrieved by the decision of the CBFC can file an appeal with the FCAT.

➤ Right to Silence = Right to silence emanates from Article 20(3), which states that no one can be compelled to be a witness against himself + Protection is limited only to criminal proceedings + Right is not available to a person being interrogated under Customs Act, 1962, or Foreign Exchange Management Act, 1999, since the person is not "accused of an offence" and isn't entitled to a lawyer + In Nandini Satpathy v. P.L. Dani case, SC stated that compelling a person to answer a question within the limits of the police station may result in a violation of Article 20(3).

➤ Central Board of Indirect Taxes and Customs (CBIC) = Central Board of Indirect Taxes and Customs (CBIC), formerly known as the Central Board of Excise and Customs (CBEC), is a one of the Statutory Boards constituted under the statute the Central Boards of Revenue Act, 1963 + It is subordinate to the Department of Revenue under the Ministry of Finance +

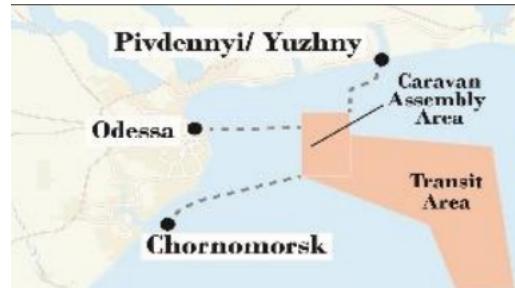
The CBIC is headed by a Chairman and has 6 members in addition to the Chairman + It deals mainly with the tasks of formulation and implementation of policy concerning to the levy and collection of **Customs duties, Central Excise duties and Goods & Services tax, prevention of smuggling and administration of matters relating to Customs, Central Excise, Central Goods and Service Tax (CGST) and Narcotics** to the extent under CBIC's purview.

➤ **Advertising Standards Council of India (ASCI)** = Established in 1985 by professionals from the advertising and media industry to keep Indian ads decent, fair and honest + It is a **voluntary self-regulatory organisation** + ASCI has been committed to protecting Indian consumers' interests through self-regulation in advertising + Recently, The Advertising Standards Council of India (ASCI) has issued guidelines for "dark patterns".

- **Dark Patterns** = A dark pattern is a user interface crafted to trick or manipulate users into making choices detrimental to their interests. E.g. Buying a more expensive product or paying more than what was initially disclosed etc + Misleading advertisements are defined under the Consumer Protection Act of 2019.

➤ **Horizon 2047 Framework** = Marking 25 years of their strategic relations, India and France, in their recent meeting, outlined the trajectory of their bilateral ties till 2047 launching the Horizon 2047 framework + The Horizon framework includes **sectors from defence, nuclear energy & space, to eliminating single-use plastic and a five-year Schengen visa** + The two nations adopted three pillars focusing on **security, planet, and people** guiding the bilateral ties for the next 25 years.

➤ **Black Sea Grain Deal** = The Black Sea Grain deal was brokered by the United Nations and Türkiye in July last year between Russia and Ukraine + The deal tackled escalating food prices from supply chain disruptions due to the effective blockage of the Black Sea + It provided a safe maritime humanitarian corridor for Ukrainian exports (particularly for food grains) from three of its key ports, namely, Chornomorsk, Odesa, and Yuzhny/Pivdennyi + The deal was for a period of 120 days with an option to extend or terminate. It was extended two times + Recently, Russia withdrew from the Black Sea grain deal. Russia claims that the promises made to it under the deal have not been met, and it is still facing trouble exporting its own agricultural products and fertilisers.



➤ **U.S.-India Strategic Clean Energy Partnership (SCEP)** = SCEP was established as one of the two track engagements launched under the **US-India Climate and Clean Energy Agenda 2030 Partnership** + 2030 agenda was announced in 2021 to accelerate progress toward shared climate and clean energy goals + Climate Action and Finance Mobilization Dialogue is its 2nd track of engagement + Other related initiatives launched were:

- **South Asia Group for Energy (SAGE)** = 2nd phased Launched + US Agency for International Development (USAID) and India's ministry of new and renewable energy (MNRE) have announced the launch of a new partnership – SAGE + USAID will provide **advanced technical knowledge on clean energy development from America's national laboratories to India's technical institutions**.

- **Renewable Energy Technologies Action Platform (RETAP)** = U.S.-India New and Emerging Renewable Energy Technologies Action Platform (RETAP) was launched to

accelerate the development of critical technologies to advance common ambitious clean energy goals.

➤ **India – UAE Relations** = UAE is India's 3rd largest trading partner for 2022-23 + UAE is 2nd largest export destination + In past, UAE signed a Comprehensive Economic Partnership Agreement(CEPA) with India (first country) + Recently, Indian PM visited UAE and key outcomes were:

- **Local Currency Settlement System (LCSS) Framework** = Recently signed between India and United Arab Emirates (UAE) + pact to trade in local currencies and to promote the use of the Indian Rupee (INR) and UAE Dirham (AED) for cross-border transactions + LCSS would enable exporters and importers to invoice and pay in their respective domestic currencies, promoting the development of an INR-AED foreign exchange market.
- **Financial Engagements** = Both sides agreed to link India's Unified Payments Interface (UPI) with UAE's Instant Payment Platform (IPP) + Both sides agreed to link their respective Card Switches vis-a-vis the RuPay switch and UAESWITCH to enable mutual acceptance of domestic cards + India's Structured Financial Messaging System (SFMS) will be linked with messaging system in UAE to ease their financial messaging.
- **IIT-Delhi campus in Abu Dhabi** = Both sides signed an MoU to establish the IIT-Delhi campus in Abu Dhabi, the second IIT abroad after Tanzania.

➤ **Group of Global Crisis Response Group (GCRG)** = GCRG was set up by the UN Secretary-General (UNSG) in 2022 to address urgent and critical global issues about interlinked crises in food security, energy, and finance and to coordinate an international response + It is overseen by the Champions Group comprising the Head of State/Head of Government of Bangladesh, Barbados, Denmark, Germany, Indonesia and Senegal + It will help decision-makers to mobilise solutions and develop strategies to help vulnerable countries + Recently, India has joined United Nations' GCRG.

➤ **Clean Energy Ministerial (CEM) and Mission Innovation (MI)** = India hosted the 4th Clean Energy Ministerial (CEM14) and 8th Mission Innovation (MI-8) meeting + The theme for CEM-14 / MI-8 was "Advancing Clean Energy Together"

- **Clean Energy Ministerial (CEM)** = it was established in December 2009 at the UN's Framework Convention on Climate Change conference (UNFCCC) of parties in Copenhagen + It was established in December 2009 at the UN's Framework Convention on Climate Change conference of parties in Copenhagen + 29 countries are part of CEM, including India + Recently, Clean Energy Marine Hubs (CEM-Hubs) was launched at CEM14. It is a cross sectoral public-private platform to de-risk investments needed to produce low and zero emission fuels to be transported by maritime sector.
- **Mission Innovation** = global initiative to pioneer clean energy solutions through domestic innovation and international cooperation + It consists of 24 countries and EU + India is a founding member + The first phase of Mission Innovation was launched along the Paris Climate Change Agreement at the 2015 UN Climate Conference + Mission Innovation 2.0, second phase of MI, was launched in 2021 + Clean Hydrogen, Green Powered Future, Zero-Emission Shipping, Carbon Dioxide Removal, Urban Transitions etc. are covered under MI.

➤ **European Sky Shield Initiative (ESSI)** = ESSI aims to create a European air and missile defence system through European nations' common acquisition of air defence equipment and missiles to strengthen NATO's Integrated Air and Missile Defence + ESSI members have increased to 19, including Belgium, Bulgaria, the Czech Republic, Norway, Slovakia, and the UK + The initiative was spearheaded last year by Germany after Russia invaded Ukraine + Recently, Austria and Switzerland joined ESSI.

➤ **Goods and Services Tax (GST)** = GST is a comprehensive, multi-stage, destination based single domestic tax on the consumption of goods and services + It was introduced through the Constitution (One Hundred and First Amendment) Act, 2016 for the ‘One Nation, One Tax, One Market’ regime + Levied at every value addition point, it has subsumed several indirect Central and State/UT level taxes on goods and services + Some taxes are still out of its ambit such as- Excise Duty on Alcohol, Property Tax; Stamp Duty, Petroleum crude, Diesel, Petrol, Aviation Turbine Fuel, Natural Gas, Electricity Duty, Basic Custom Duty, etc + Components of GST: Based on inter-state and intra-state, it has four components- Central GST (CGST), State GST (SGST), Union Territory GST (UTGST), and Integrated GST (IGST).

➤ **Online Gaming** = The GST council recently imposed a GST of 28% on online gaming, horse racing and casino + Covers both games based on both skill and chance +

- **Game of Skill:** Games in which the outcome depends on the player’s expertise, practice, and experience and not merely on chance + Until now, 18% GST was charged on the platform’s commission/ service fee or gross gaming revenue + Example: rummy and fantasy sports games like Dream 11.
- **Game of Chance:** Games in which the outcome is decided by randomised events and treated similarly to betting, gambling and horse racing + Till now a 28% GST was charged on these games + Example: Ludo, poker, lottery etc.

➤ **Current Scenario of Taxation in India** = Tax to GDP ratio: 11.1% in FY23 + Direct Taxes: 6% > Indirect taxes: 5.1% + Filing of Income Tax Returns (ITR): 5.3% of the total population + The concept of Income tax was introduced in India in 1860 by James Wilson, the 1st finance minister of British Indian Government + The tax was temporarily repealed between 1865- 1886 and is continuing its existence till date.

➤ **Jan Vishwas (Amendment of Provisions) Bill, 2023** = Recently, the Jan Vishwas (Amendment of Provisions) Bill, 2023, was passed in Lok Sabha. The Bill aims to give a boost to ease of living and ease of doing business + Decriminalises around 180 offences across 42 laws governing environment, agriculture, media, industry and trade, publication, etc + Converts several fines into penalties, implying that judicial prosecution is not necessary to administer punishment + Removes all offences and penalties under the Indian Post Office Act 1898.

➤ **Foreign Portfolio Investors (FPIs)** = FPI is an investment by non-residents in Indian securities including shares, government bonds, corporate bonds, convertible securities, units of business trusts, etc. The class of investors who make an investment in these securities is known as Foreign Portfolio Investors + FPI investments typically include equities, bonds and mutual funds. They are generally not active shareholders and do not exert any control over the companies whose shares they hold. FPI holdings can include stocks, ADRs, GDRs, bonds, mutual funds, and exchange-traded funds (imp terms, cover from static notes)+ FPI is part of a country’s capital account and is shown on its Balance of Payments (BOP) + FPI is more liquid, volatile and therefore riskier than FDI. FPI is also called “hot money” + FPIs are primarily governed by The Securities and Exchange Board of India (SEBI). SEBI has recently introduced the SEBI (Foreign Portfolio Investors) Regulations, 2019, repealing the erstwhile 2014 Regulations. Further, FPIs are also required to comply with the Foreign Exchange Management Act, 1999 and the Income-tax Act, 1961.

➤ **Corporate Debt Market Development Fund (CDMDF)** = Recently, SEBI released a framework for rolling out the Corporate Debt Market Development Fund (CDMDF) + CDMDF, established as an alternate investment fund, will purchase investment-grade corporate-debt securities during market stress + During market stress, the Debt Market faces redemption pressures in the open market (especially schemes with long maturity periods). CDMDF will help the market by providing liquidity access in such times + Contribution to the

fund shall be mandatory for specified debt-oriented MF Schemes and Asset Management Companies (AMCs) + Tenure: Initially 15 years, it can be extended as per SEBI's mandate.

- **Mines and Minerals (Development and Regulation) Amendment Bill, 2023** = Recently, the Parliament passed the Mines and Minerals (Development and Regulation) Amendment Bill, 2023 + It will amend the Mines and Minerals (Development and Regulation) (MMDR) Act, 1957 + MMDR was comprehensively amended in 2015 to bring several reforms in the mineral sector, such as establishing the District Mineral Foundation and National Mineral Exploration Trust + The Act was further amended in 2016, 2020 and 2021 to bring further reforms in the sector, such as: Removing the distinction between captive and merchant mines, and Removing the restrictions on the transfer of mineral concessions + The Bill allows the private sector to mine six out of 12 atomic minerals such as lithium, beryllium, niobium, titanium, tantalum and zirconium + When it becomes an Act, Centre will have powers to auction mining lease and composite licence for critical minerals such as gold, silver, copper, zinc, lead, nickel etc.

- **Mahatma Gandhi National Rural Employment Guarantee Act 2005 (MGNREGA)** = Ministry of Rural Development (MRD) + Mahatma Gandhi National Rural Employment Guarantee Act + The primary objective of the scheme is to guarantee 100 days of employment in every financial year to adult members of any rural household willing to do public work-related unskilled manual work + At least one-third of beneficiaries have to be women + Wages must be paid according to the statutory minimum wages specified for agricultural labourers in the state under the Minimum Wages Act, 1948 + MGNREGA provides legally-backed guarantee for any rural adult to get work within 15 days of demanding it, failing which an 'unemployment allowance' must be given + The act mandates Gram sabhas to recommend the works that are to be undertaken and at least 50% of the works must be executed by them + It is the Gram Sabha and the Gram Panchayat which approves the shelf of works under MGNREGA and fix their priority + Gram Sabha is the principal forum for wage seekers to raise their voices and make demands + Ministry of Rural Development (MRD) is monitoring the entire implementation of this scheme in association with state governments + Social Audit of MGNREGA works is mandatory + Eligibility criteria for receiving the benefits under MGNREGA scheme: (i) Must be Citizen of India to seek NREGA benefits; (ii) Job seeker has completed 18 years of age; (iii) Applicant must be part of a local household (i.e. application must be made with local Gram Panchayat); (iv) Applicant must volunteer for unskilled labour

- **Pradhan Mantri Gram Sadak Yojana (PMGSY)** = Launched in 2000 by Ministry of Rural Development + To provide connectivity, by way of an all-weather road to unconnected habitations + Eligibility: Unconnected habitations of designated population size (500+ in plain areas and 250+ in North-Eastern States, Himalayan States, Deserts and Tribal Areas as per 2001 census) in the core network for uplifting the socio-economic condition of the rural population + Phase I was launched in 2000 while Phase II was launched in 2013 for upgradation of 50,000 Kms of existing rural road network to improve its overall efficiency. While the ongoing PMGSY – I continued, under PMGSY phase II, the roads already built for village connectivity was to be upgraded to enhance rural infrastructure + both phased PMGSY I and II continued up to September, 2022 + PMGSY phase III was launched in 2019 and has to continue until 2025 + Phase III involves consolidation of Through Routes and Major Rural Links connecting habitations to Gramin Agricultural Markets (GRAMs), Higher Secondary Schools and Hospitals. Under the PMGSY-III Scheme, it is proposed to consolidate 1,25,000 Km road length in the States.

- **National Bank for Agriculture and Rural Development (NABARD)** = It came into existence on the recommendation of B. Sivaraman committee in 1982 by NABARD Act, 1981 by transferring Agriculture credit functions of RBI and refinance functions of then Agriculture refinance and Development corporation + NABARD is administered by Ministry of Finance + NABARD is wholly governed by Government of India + It act as a development bank of the

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nation for **fostering rural prosperity** through financial and non-financial interventions + NABARD has some **credit related functions** like providing refinance to lending institutions in rural areas; providing **loans to Farmer's producer organisations**, Primary Agriculture credit societies(**PACS**) or similar Institutions + Some of the important initiatives supported by NABARD are **Self Help Groups Bank linkage (SHGBLP) programme**; Livelihood and Enterprise Development Programme (**LEDP**); **Kisan Credit Card scheme** etc.

➤ **Livestock Sector** = It provides livelihood to **two-third of rural community** + **Animal Husbandry is a State subject** + **India is world's highest livestock owner, being First in the total buffalo population, Second in the goat population and Third in the sheep population, Second largest poultry market in the world, Second largest producer of fish and also second largest aquaculture nation in the world** + Key Government Initiatives for Livestock Sector:

- **Credit Guarantee scheme for the livestock sector** = Recently, Department of Animal Husbandry and Dairying (DAHD), Ministry of Fisheries, Animal Husbandry and Dairying has launched the first ever Credit Guarantee scheme for the livestock sector + It aims to strengthen credit delivery system and facilitate smooth flow of credit to the MSMEs engaged in the Livestock sector + It will be under the Animal Husbandry Infrastructure Development Fund (AHIDF) + DAHD has established a Credit Guarantee Fund Trust of ₹ 750 crores, which will provide credit guarantee coverage of up to 25% of the credit facilities extended to the MSMEs.
- **National Livestock Mission** = To promote entrepreneurship development and breed improvement in poultry, sheep, goat and piggery including feed and fodder development.
- **Rashtriya Gokul Mission** = Objective is to get native breeds to produce more milk, be more fecund, and to raise the quality of Indian cows and bulls to eventually outdo Jerseys and Holsteins + Rashtriya Gokul Mission will be implemented through the "State Implementing Agency (SIA viz Livestock Development Boards)

➤ **Animal Husbandry Infrastructure Development Fund (AHIDF)** = It is a **central-sector** scheme established under the **Atma Nirbhar Bharat Stimulus Package** + It incentivizes investments by individual entrepreneurs, private companies, MSME, Farmers Producers Organizations (FPOs) and Section 8 companies to establish: dairy processing infra, meat processing infra etc + It provides financial support with interest subvention upto 3% and **Loans up to 90% of the total project cost** from any Scheduled Bank, National Cooperative Development Corporation (NCDC).

➤ **Tomato production in India** = India grows two significant crops of tomato + **Rabi crop**: Grown mainly in **Maharashtra, Karnataka and Andhra Pradesh** + **Kharif crop**: Grown mainly in **Madhya Pradesh, Uttar Pradesh, Maharashtra**, and others + About 5 lakh hectares of farmland come under rabi tomato, and around 8-9 lakh hectares under the Kharif crop on average + Recently, Tomato crops in Maharashtra were impacted by the Cucumber Mosaic Virus (CMV) attacks. In contrast, crops in Karnataka and other South Indian states were affected by Tomato Mosaic Virus (ToMV)

- **Tomato Mosaic Virus (ToMV)** = It impacts Tomato, tobacco, peppers, and certain ornamental plants + It spread primarily through infected seeds, saplings, and agricultural tools.
- **Cucumber Mosaic Virus (CMV)** = It impacts Cucumber, melon, eggplant, tomato, carrot, lettuce, celery, cucurbits (members of the gourd family, including, pumpkin, zucchini etc.), and some ornamentals + It spread by aphids, which are sap-sucking insects.

➤ **Pradhan Mantri Fasal Bima Yojana (PMFBY)** = Pradhan Mantri Fasal Bima Yojana (PMFBY) is a **crop insurance scheme** launched in 2016 to provide financial support and risk coverage to farmers against crop losses due to natural calamities, pests, and diseases + All

farmers growing notified crops in a notified area during the season who have insurable interest in the crop are eligible + Coverage of Crops: State government notifies major crops for the Rabi and Kharif seasons[So, NOT for all crops] + Farmers pay just 1.5% premium for rabi, 2% premium for kharif and 5% for commercial crops + all farmers in a particular area must pay the same premium and have the same claim payments + It aims to prevent sowing/planting risks, loss to standing crop, post-harvest losses and localised calamities (no revenue protection) + Recently Ministry of Agriculture has launched 3 initiatives under PMFBY in order to provide crucial weather-related information to farmers

- **Weather Information Network Data Systems (WINDS) Portal** = : A centralized platform that hosts, manages, and processes hyper-local weather data collected by Automatic Weather Stations and Rain Gauges at Taluk/Block and Gram Panchayat levels + It will enhance risk assessment and decision-making in crop insurance, agriculture advisories, and disaster mitigation.
- **YES-TECH (Technology-based Yield Estimation System) Manual** = A technology-driven yield estimation system, offering methodologies, best practices, and integration insights for accurate yield assessments at the Gram Panchayat level.
- **AIDE (App for Intermediary Enrolment) Mobile App** = App ensures a seamless and transparent process, making crop insurance more accessible and convenient for farmers

➤ **Global Regulatory Framework for Crypto-Asset Activities** = Recently Financial Stability Board (FSB) finalised the global regulatory framework for crypto-asset activities + Incorporating learnings from events in crypto-asset markets, the regulatory framework aims to promote comprehensiveness and international consistency of regulatory and supervisory approaches + Framework is based on the principle of 'same activity, same risk, same regulation' + Central Bank Digital Currencies are not subject to these recommendations.

- **Crypto-Asset** = Crypto assets are private-sector digital assets that depend primarily on cryptography, distributed ledger, or similar technology + Different segments of crypto-asset markets are – unbacked crypto-assets(such as Bitcoin), stablecoins, and decentralised finance (DeFi).
- **Stablecoins** = They are cryptocurrencies whose value is pegged or tied to that of another currency, commodity, or financial instrument + Stablecoins aim to provide an alternative to the high volatility of the most popular cryptocurrencies, including Bitcoin (BTC) + Unlike cryptocurrencies like Bitcoin, stablecoins' prices remain steady in accordance with whichever fiat currency backs them + Tether (USDT) and USD Coin (USDC) are the two leading stablecoins. Terra is another stablecoin.
- **Financial Stability Board (FSB)** = FSB is an international body that monitors and makes recommendations about the global financial system + It was established in 2009 after the G20 Summit in London + Headquarters: Basel, Switzerland + The board includes all G20 major economies + The FSB, working through its members, seeks to strengthen financial systems and increase the stability of international financial markets + The FSB consists of 68 member institutions. It comprises several central banks, ministries of finance, and supervisory and regulatory authorities from 25 jurisdictions, as well as 10 international organizations and six Regional Consultative Groups (RCGs) + The Plenary, which serves as the sole decision-making body. India is an active Member of the FSB, having three seats in its Plenary represented by Secretary (Dept of Economic Affairs), Deputy Governor-RBI, and Chairman-SEBI.

➤ **OECD/G20 Inclusive Framework Tax Deal** = India and the majority of the members of OECD-G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS) have joined a new two-pillar plan to reform international taxation rules + OECD has been taking steps to enable countries to prevent tax evasion and corporate tax avoidance and launched a project on Base Erosion and Profit Shifting (BEPS) in 2013. BEPS refers to tax planning strategies that

multinational enterprises (MNEs) use that exploit gaps and mismatches in tax rules to avoid paying taxes + The two-pillar plan - inclusive framework tax deal on Base Erosion and Profit Shifting (BEPS)- seeks to reform international tax rules and ensure that multinational enterprises pay their fair share wherever they operate + The signatories of the plan amounted to 130 countries and jurisdictions +

- o Two Pillar Plan:
 - **Pillar One:** It will ensure a fairer distribution of profits and taxing rights among countries with respect to the largest MNEs, including digital companies + Under this, 25% of profits of the largest and most profitable MNEs above a set profit margin would be reallocated to market jurisdictions where MNE's users and customers are located.
 - **Pillar Two:** It is about minimum tax and subject-to-tax rules + It seeks to put a minimum standard tax rate among countries through a global minimum corporate tax rate, currently proposed at 15% + Recently, 138 countries and jurisdictions (including India) agreed to a historic milestone to implement a global tax deal.
- o **OECD** = intergovernmental economic organisation which aims to promote policies that will improve the economic and social well-being of people around the world + It has 36 member countries and was founded in 1960 by 18 European nations plus the United States and Canada + India is NOT a member of OECD.

➤ **Global Survey on Digital and Sustainable Trade Facilitation** = Released by United Nations Economic and Social Commission for Asia Pacific's (UNESCAP) + It is a bi-annual survey that deals with trade facilitation measures taken by individual countries + The survey covers the WTO Trade Facilitation Agreement along with a set of nearly 60 trade facilitation measures which are categorised into 11 sub-groups, namely, Transparency; Formalities; Institutional arrangement and cooperation; Transit facilitation; Paperless trade; Cross-border paperless trade; Trade facilitation for SMEs; Agricultural trade facilitation; Women in trade facilitation; Trade finance for trade facilitation; and Trade facilitation in times of crisis + **(United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP))** = It is the regional development arm of the United Nations for the Asia-Pacific region + It has 53 Member States including India + Headquarters: Bangkok, Thailand + India is a member + It serves as the United Nations' regional hub promoting cooperation among countries to achieve inclusive and sustainable development)

➤ **'A World of Debt' Report** = Released by United Nations Conference on Trade and Development (UNCTAD) + Public debt is the total amount, including total liabilities, borrowed by the government to meet its development budget + Global public debt (USD 92 trillion in 2022) increased more than fivefold since 2000 + Half of developing countries devote more than 1.5% of their GDP and 6.9% of their government revenues to interest payments than to education or health + Developing countries rely more on private creditors now, making credit more expensive and debt restructuring more complex + **(United Nations Conference on Trade and Development(UNCTAD))** = It is a permanent intergovernmental body established by the United Nations General Assembly in 1964 which is responsible for dealing with development issues, particularly international trade + The Conference ordinarily meets once in four years + Headquarters: Geneva, Switzerland + Reports Published by UNCTAD: Trade and Development Report; Trade and Environment Review; World Investment Report and Least Developed Countries Report)

➤ **Mahila Samman Savings Certificate** = MSSC is a small savings scheme + It is available for subscription in Post Offices, and eligible Scheduled Banks + An account can be opened under MSSC scheme on or before the March 31, 2025, for a tenure of two years + Opening an account under the MSSC scheme can be made by a woman for herself or by the guardian on behalf of a minor girl + The deposit made under MSSC will bear interest at the rate of 7.5% per annum

which will be compounded quarterly + Investment limit: A minimum of ₹1000 and any sum in multiple of 100 may be deposited within the maximum limit of ₹200,000 + Recently, Government permitted all Public Sector Banks and eligible Private Sector Banks to implement and operationalise the Mahila Samman Savings Certificate (MSSC), 2023

- **Twin Balance Sheet Problem** = Recently, Finance Minister stated that the Indian economy has moved away from the twin balance sheet problem + The twin balance sheet issue refers to earlier problematic balance sheets of both companies and banks + Companies had excessive debt and insufficient funds to repay it and banks were burdened with significant nonperforming assets (NPAs)- reached almost 12% in 2016-17 + However, as per RBI's recent Financial Stability Report, banking and corporate sector balance sheets have strengthened, and India might be on the cusp of a twin balance sheet advantage. The gross NPA ratio fell to a 10-year low of 3.9%. Corporate balance sheet is also at its healthiest in 10 years.
- **Centralised Information Management System (CIMS)** = Introduced by Reserve Bank of India(RBI) + It would work as a next generation data warehouse + CIMS is a platform for data mining, text mining, and statistical analysis + It will improve monetary policymaking through refined economic analysis and management of big data flow. It will disseminate more data for public use and support online statistical analysis by external users + Please Note: RBI established its first enterprise-wide data warehouse, Central Database Management System (CDBMS), in 2002.
- **Project WAVE** = Initiative by Indian Bank (a public sector bank) + Recently, Indian Bank has unveiled new services under its digital transformation initiative 'Project WAVE (World of Advance Virtual Experience)' + It has been introduced in collaboration with National E-Governance Services Ltd + Under it, an electronic bank guarantee (e-BG) service has been introduced to ease traditional paper-based processes.
- **Export Preparedness Index (EPI) 2022** = 3rd edition recently released by NITI Aayog + EPI, by NITI Aayog in association with Institute for Competitiveness, presents a comprehensive analysis of India's export performance in FY22, along with its sector-specific and district-level merchandise export trends + EPI includes four pillars –Policy; Business Ecosystem; Export Ecosystem; Export Performance + Ten commodities (engineering goods, petroleum products etc.) account for nearly 80% of India's total exports + Only 100 districts are responsible for nearly 87% of exports + 49% of India's exports go to only ten destinations.
- **Production Linked Incentive (PLI) Scheme 2.0 for IT Hardware** = PLI scheme, launched in 2020, aims to make domestic manufacturing globally competitive and create global manufacturing champions + PLI scheme is available in 14 manufacturing sectors, such as medical devices, food products, textile products, pharmaceuticals, etc + PLI scheme for IT hardware was first notified in 2021 + PLI 2.0 for IT hardware aims at broadening and deepening the IT hardware manufacturing ecosystem in the country + Recently, Guidelines for Operationalisation of PLI Scheme 2.0 for IT Hardware has been approved by Ministry of Electronics and Information Technology (MeitY) + Scheme will have incentive period of 6 years and Incentives shall be given on the sales of Target Segment Goods + Goods manufactured in India and covered under the target segment.
- **Bhoomi Samman Award 2023** = Presented by Ministry of Rural Development + Recently, Nine state secretaries have received Bhoomi Samman awards for their achievements in implementing the Digital India Land Records Modernization Programme (DILRMP)
 - **Digital India Land Records Modernization Programme (DILRMP)** = 2008 + Ministry of Rural Development + Formed by merger of two centrally sponsored schemes namely: Computerization of Land Records (CLR), Strengthening of Revenue Administration and Updating of Land Records (SRA&ULR) + It has 3 components: Computerization of land record, Survey/re-survey & Computerization of Registration + The State Governments/UT Administrations will implement it with financial and

technical supports from the Dept. of Land Resources + + The scheme has now been extended till 2023-24 + In India, Computerization of Land Records (Record of rights) has been completed in 94% of villages.

- **Unique Land Parcel Identification Number (ULPIN) Scheme or Bhu Aadhar** = Launched last year by Department of Land Resources + Centre plans to issue a 14-digit identification number to every plot of land in the country within a year + It will subsequently integrate its land records database with revenue court records and bank records, as well as Aadhaar numbers on a voluntary basis + This is the next step in the Digital India Land Records Modernisation Programme (DILRMP), which began in 2008.

- **SVAMITVA Scheme** = Ministry of Rural Development & Panchayati Raj + SVAMITVA (Survey of Villages and Mapping with Improvised Technology in Village Areas) scheme is a collaborative effort of the Ministry of Panchayati Raj, State Panchayati Raj Departments, State Revenue Departments and Survey of India + It is a scheme for mapping the land parcels in rural inhabited areas using drone technology and Continuously Operating Reference Station (CORS). The mapping will be done across the country in a phase-wise manner over a period of four years - from 2020 to 2024 + The scheme will help in streamlining planning and revenue collection in rural areas and ensuring clarity on property rights.

➤ **Standing Committee on Statistics (SCoS)** = Ministry of Statistics and Programme Implementation (MoSPI) has replaced the Standing Committee on Economic Statistics (SCES) with SCoS + SCoS will have a broader mandate to review the framework and results of all surveys conducted under the National Statistical Office + Please Note: **National Statistical Commission will have ultimate authority to approve the publication of survey results.**

➤ **Industrial License** = In India, industrial licenses are issued under and are regulated by the **Industries (Development and Regulation) Act (IDRA), 1951** + Recently, Department for Promotion of Industry and Internal Trade (DPIIT) has extended the validity period of industrial licenses from three years to fifteen years to promote ease of doing business.

➤ **e-FAST India** = 2022 + NITI Aayog, in collaboration with World Resources Institute (WRI), India, launched the country's first national **electric freight platform** – e-FAST India (Electric Freight Accelerator for Sustainable Transport – India) + The platform aims to raise awareness on freight electrification bolstered by on-ground demonstration pilots and evidence-based research.

➤ **Council of Europe's (CoE) Cybercrime Convention** = also known as the **Budapest Convention** + came into force in 2001 + is the **only binding international instrument that addresses Internet and computer crime** + It deals with issues such as **infringements of copyright, computerrelated fraud, child pornography and violations of network security** + It is supplemented by a **"Protocol on Xenophobia and Racism"** committed through computer systems + The Convention has 56 members, including the US and the UK + **India is NOT yet a member.**

➤ **Citizen Financial Cyber Fraud Reporting and Management System (CFCFRMS)** = CFCFRMS was operationalised in 2022 as a national helpline to report all sorts of financial frauds and immediately prevent the stealing of funds by cheats + It has been made operational by **Indian Cyber Crime Coordination Centre (I4C)**, under MHA, to integrate Law Enforcement Agencies and Banks and Financial Intermediaries + It leverages new-age technologies for sharing online fraud-related information and taking action in almost real time + According to the Ministry of Home Affairs (MHA), Rs 570 crore has been saved using CFCFRMS.

➤ **Operation Southern Readiness – 2023** = It is an annual multinational exercise (**India, USA, Italy, UK, Seychelles**) conducted by Combined Maritime Forces.

➤ **Biological Diversity (Amendment) Bill, 2023** = +

- **Biological Diversity Act, 2002** = Aim: To fulfill India's obligations under the Convention of Biological Diversity(CoBD) 1992 and Nagoya Protocol on Access and Benefit Sharing + It provides for a decentralised three-tiered mechanism (see infographic) for implementation of the Act + Biodiversity Management Committees (BMC) are responsible for preparing People's Biodiversity Registers which keep a record of all flora and fauna including details of traditional knowledge available in their region + The act stipulates all offences under it as cognizable and non-bailable + Recently, both houses of Parliament passed the Biological Diversity (Amendment) Bill, 2023, amending the Biological Diversity Act of 2002.

Changes in	Biological Diversity Act 2002	Biological Diversity (Amendment) Bill 2023
Exemptions	Act requires prior approval of regulatory body for accessing biological resources	It exempts AYUSH registered practitioners, local people and communities of the area, including growers and cultivators of biodiversity for commercial Utilisation
Approval for IPR	Approval of NBA is required before applying for IPR involving biological resources obtained from India	Amendment changes the requirement and now the approval will be required before the actual grant of the IPR and not before the application.
Benefit Sharing	Act requires users of biological resources and associated knowledge to share benefits with local communities	Bill exempts users of "codified traditional knowledge" from this requirement
Offences and Penalties	Offences like failure to take approvals were punishable up to 5 years or a fine or both.	Bill decriminalises the offences and makes offences punishable with a penalty between Rs 1 lakh and Rs 50 lakh. Continuing contravention may attract an additional penalty of up to 1 crore rupees (Here, the adjudicating officer should not be below the rank of Joint Secretary)
Expansion of NBA	Act requires NBA to have 10 ex-officio members apart from the Chairman. 5 non-official members to be appointed from amongst specialists (including legal) and scientists.	<ul style="list-style-type: none"> • 16 ex officio members representing the Ministries like Tribal Affairs, Biotechnology etc. • 4 representatives from SSB. • 5 non-official members amongst specialists (including legal) and scientists. ▪ 1 Member-Secretary (must have experience in biodiversity conservation), who will be the chief coordinating officer of the NBA.

- **National Biodiversity Authority(NBA)** = The National Biodiversity Authority (NBA) was established in 2003 by the Central Government to implement India's Biological Diversity Act (2002) + It is a Statutory body that performs facilitative, regulatory and advisory functions for the Government of India on the issue of Conservation and sustainable use of biological resources + The NBA has its Headquarters in Chennai, Tamil Nadu, India + Structure: A Chairperson & 10 Ex Officio members; Three ex officio members, one representing the Ministry dealing with Tribal Affairs and two representing the Ministry dealing with Environment and Forests; Seven ex-officio members to represent respectively the Ministries of the Central Government dealing with: Agricultural Research and Education, Biotechnology, Ocean Development, Agriculture and Cooperation, Indian Systems of Medicine and Homoeopathy, Science and Technology and Scientific and Industrial Research + Apart from these 10 Ex officio members, there are 5 non official members too + Recently, Biological Diversity (Amendment) Bill, 2023 proposed to change the structure of NBA.

- **Status of Tigers, co-predators and Prey in India-2022 Report** = The National Tiger Conservation Authority (NTCA) recently released the Status of Tigers, co-predators and Prey in India-2022 report + 53 tiger reserves cover 2.3% of India's total land area + India currently harbours almost 75% of the world's wild tiger population + Tigers in the country has increased to 3682 in 2022 from 2967 in 2018 + Central India and the Shivalik Hills and Gangetic Plains

witnessed a notable increase in tiger population + Technique used were **M-STrIPES** (Monitoring System For Tigers-Intensive Protection and Ecological Status); Camera trap-based Capture-Mark-Recapture and by extracting DNA from scats + Other Important Stats:

- **States with Highest Tiger Numbers:** MP > Karnataka > Uttarakhand > Maharashtra > Tamil Nadu
- **Reserve with Highest Tiger Population:** Jim Corbett (Uttarakhand) > Bandipur (Karnataka) > Nagarhole (Karnataka) > Bandhavgarh (MP) > Dudhwa (UP)
- **States with Lowest Tiger Numbers:** Nagaland (0); Mizoram (0); Jharkhand (1); Goa (5) and Arunachal (9)
- **Reserves with No Tigers:** Dampa (Mizoram); Kamlang (Arunachal Pradesh); Kawal (Telangana); Satkosia (Odisha) and Sahyadri (Maharashtra)

➤ **Management Effectiveness Evaluation (MEE)** = Recently, the National Tiger Conservation Authority (NTCA) released the **Management Effectiveness Evaluation (MEE)** of Tiger Reserves in India (5th cycle) – Final report + The government has been using the MEE to assess tiger reserves nationwide since its inception in 2006 + It is being jointly conducted by the National Tiger Conservation Authority (NTCA) and the Wildlife Institute of India (WII) + The framework for assessing the management effectiveness of protected areas was given by International Union for Conservation of Nature and Natural Resources World Commission on Protected Areas + 51 tiger reserves were evaluated as two newly declared tiger reserves, Ramgarh Visdhari and Ranipur, have not been included in the current cycle of MEE + The **Periyar Tiger Reserve in Kerala has been ranked as the best-maintained tiger reserve in India** + The overall mean **MEE score has increased from 65% in the second cycle in 2010 to 78%** in the present assessment, indicating continuous improvement in management effectiveness.

➤ **Project Tiger and Elephant Division (PT&E)** = Centre merged Project Tiger and Project Elephant + After the merger, a new division named ‘Project Tiger and Elephant Division’ (PT&E) has been created under the Ministry of Environment, Forest, and Climate Change (MoEF&CC) + The staff and divisional heads of Project Elephant (PE) will now report to the additional director general of forests (ADGF), Project Tiger (PT), who has now been designated as ADGF (PT&E) + Reason for the merger is to rationalize funding for both conservation projects.

- **Project Tiger** = first initiated in 1973 (recently completed 50 years) at Jim Corbett National Park, Uttarakhand + Centrally Sponsored Scheme under the Ministry of Environment, Forests and Climate Change (MoEFCC) + National Tiger Conservation Authority (NTCA) is the implementing authority + States covered - 18 States in India.
- **Project Elephant** = centrally sponsored scheme launched in 1992 + Aim: To provide financial and technical support to major elephant bearing States in the country for protection of elephants, their habitats and corridors + Other goals: supporting the research of the ecology and management of elephants, creating awareness of conservation among local people, providing improved veterinary care for captive elephants + Project is being implemented in 16 States / UTs + The project seeks to ensure the long-term survival to the populations of elephants in their natural habitats by protecting the elephants, their habitats and migration corridors + **Project Elephant** has been formally implementing **MIKE (Monitoring of Illegal Killing of Elephants)** programme of **CITES** in 10 ERs (Elephant Reserve) since January 2004. It is mandated by COP resolution of CITES.

➤ **Forest Conservation (Amendment) (FCA) Bill, 2023** = It will amend Forest (Conservation) Act 1980 + Forests is a subject under the **Concurrent List in the Seventh Schedule** of the Constitution of India, empowering the Parliament of India to enact a law on it + The Act has been given a new name through the amendment- ‘**Van (Sanrakshan Evam Samvardhan) Adhiniyam**’ (Forest (Conservation and Augmentation) Act), 1980 + The Bill broadens the

scope of the Act by inserting a Preamble + The Act, which was initially applied to notified forest land, was later extended to revenue forest land and lands recorded as forest in government records. The amendments seek to streamline the application of the Act to recorded forest lands, private forest lands, plantations, etc + The Bill proposes certain exemptions to encourage afforestation and plantation outside forests. These exemptions include strategic projects related to national security within 100 km of the International Borders, Line of Actual Control (LAC), Line of Control (LoC) etc.

- **Commission for Air Quality Management (CAQM)** = statutory body formed under the Commission for Air Quality Management in National Capital Region and Adjoining Areas, Act 2021 + Permanent statutory authority with 20 members + To be chaired by a government official of the rank of Secretary or Chief Secretary + It will supersede bodies such as the central and state pollution control boards of Delhi, Punjab, Haryana, UP and Rajasthan + It will have the powers to issue directions to these state governments on issues pertaining to air pollution + It has Exclusive jurisdiction over the NCR, including areas in Haryana, Punjab, Uttar Pradesh and Rajasthan, in matters of air pollution, and will be working along with CPCB and ISRO, apart from the respective state government + Recently, Commission for Air Quality Management in NCR & Adjoining Areas (CAQM) announced a revision in the existing GRAP to abate air pollution in the region.
 - **Graded Response Action Plan (GRAP)** = GRAP is an emergency response mechanism based on Delhi's Air Quality Index level + In pursuant to the Supreme Court's order of 2016 in the matter of M. C. Mehta vs Union of India regarding air quality in the National Capital Region of Delhi, a Graded Response Action Plan was prepared + The GRAP was first notified under the Environment (Protection) Act of 1986 in January 2017 by the Ministry of Environment, Forest, and Climate Change + According to the notification, implementing the GRAP fell on the now-dissolved Environment Pollution Control Authority(EPCA) for the NCR. From 2021 onwards, the GRAP is being implemented by the CAQM + Since October 2022, GRAP has been enforced based on the AQI.
 - **Environment Pollution Control Authority (EPCA)** = Constituted by Supreme court + prepared Graded Response Action Plan to combat air pollution in NCR + notified in 1998 by the Union Environment Ministry under the Environment Protection Act + It has the power suo- moto, or on the basis of complaints made by any individual, representative body or organization functioning in the field of environment.
 - **Air Quality Index (AQI)** = AQI is an index for reporting air quality on a daily basis + It is a measure of how air pollution affects one's health within a short time period + The National Air Quality Index (AQI) was launched in New Delhi, 2014 under the Swachh Bharat Abhiyan + The Central Pollution Control Board (CPCB) along with State Pollution Control Boards (SPCBs) has been operating National Air Monitoring Program (NAMP) covering 240 cities of the country + The proposed AQI consider 8 pollutants (PM10, PM2.5, NO₂, SO₂, CO, O₃, NH₃, and Pb) for which short-term (up to 24-hourly averaging period) National Ambient Air Quality Standards are prescribed.
- **Resource Efficiency Circular Economy Industry Coalition (RECEIC)** = Recently, RECEIC was launched at the G20 4th Environment and Climate Sustainability Working Group (ECSWG) meeting + It is an industry-driven initiative + About 39 companies headquartered in 11 countries have joined the coalition as its founding members.
- **Strategy on the Reduction of GHG Emissions from Ships** = International Maritime Organization (IMO) has adopted a Strategy on the Reduction of GHG Emissions from Ships + Adopted by the Marine Environment Protection Committee (MEPC 80), an important committee of IMO.

- **Clydebank Declaration** = For Green shipping corridors, signed at COP 26 Climate Summit + A coalition of 22 countries have agreed to create zero emissions shipping trade routes between ports to speed up the decarbonisation of the global maritime industry and agreed to support the establishment of at least 6 green corridors by 2025 + India has not signed the declaration yet + Clydebank is city in Scotland.
- **Wind Energy in India** = India is at 4th position in terms of wind power installed capacity after China, USA and Germany + Wind energy is around 10.3% of total India's energy basket + As of now, we have around 47 GW of installed capacity of wind energy + The state of Gujarat has the highest Wind Energy potential, followed by Rajasthan, Maharashtra, Tamil Nadu, Madhya Pradesh, Karnataka, Andhra Pradesh + The Indian government set a target for 175 gigawatts (GW) of renewable energy capacity by 2022. The goal included achieving 60 GW of onshore and 5 GW of offshore capacity for wind energy.
- **Crop Residue Management Guidelines** = Released by Ministry of Agriculture & Farmers Welfare + Guidelines will enable efficient ex-situ management of paddy straw generated in Punjab, Haryana, UP and Delhi + Government shall provide financial assistance on the capital cost of machinery and equipment. Central and State Governments jointly will provide financial support of 65% of the project cost. The industry will contribute 25%, and Farmers, rural entrepreneurs, FPOs etc., will contribute 10% + As per the revised guidelines, technocommercial pilot projects for Paddy Straw Supply Chain will be established under the bilateral agreement between the Beneficiary/Aggregator and Industries utilizing the paddy straw.
- **Carbon Credit Trading Scheme (CCTS)** = Notified by Ministry of Power + CCTS 2023 sets up a carbon credit trading market as the country aims to decarbonise the economy and has committed to cutting emissions by 45 per cent from 2005 levels by 2030 + CCTS was first announced under Energy Conservation Act 2001, amended by Energy Conservation (Amendment) Bill 2022 + The Bureau of Energy Efficiency (BEE) would be the administrator for the carbon market + Central Electricity Regulatory Commission (CERC) will regulate all trading activities.
- **India Climate Energy Dashboard (ICED) 3.0** = Released by NITI Aayog + One-stop platform for near real-time data on the energy sector, climate, and related economic datasets based on government-published sources + Developed as a user-friendly platform, it enables users to freely access and analyse datasets using an analytical engine.
- **WMO Ozone and Ultraviolet (UV) Bulletin** = The bulletin highlighting the steady recovery of the Ozone layer was published by World Meteorological Organisation (WMO) after a gap of seven years + Montreal Protocol and its amendments successfully eliminated up to 99% of Ozone Depleting Substances (ODS). ODS are long-lived man-made chemicals which destroy the protective ozone layer + Hunga Tonga-Hunga Ha'apai volcanic eruption (located under the ocean surface in the western Pacific) in January 2022 has increased the water vapour content of the stratosphere by 5% to 10%. Nearly 90% of Earth's ozone resides in the stratosphere.
- **Chemical Communication** = Many animals use chemical communication or pheromones to communicate. They may leave their scent to mark territory or attract mates. They often use smell to find prey and identify other animals + Infochemicals are chemicals including hormones, pheromones and allelochemicals. Sharks use these chemicals to sniff out their prey over large distances + Some plant species release info chemicals to attract pollinators but repel those that may cause harm.
- **Cryptobiosis** = Cryptobiosis is the state of an organism when it shows no visible signs of life and when its metabolic activity becomes hardly measurable or comes reversibly to a standstill + In this state, organisms can survive the complete absence of water and oxygen and withstand extreme conditions + Since metabolism is a defining characteristic of life, cryptobiosis can be termed as a temporary death of an organism.

- **Bahu Balli Cattle Fence** = Ministry of Road Transport & Highways is planning to implement the Bahu Balli Cattle Fence along highways in India + It will prevent cattle from crossing the road and causing dangerous accidents + Bamboo is treated with creosote oil and coated with recycled High-Density Poly Ethylene (HDPE), making it a stronger alternative to steel.
- **Holobionts** = A holobiont is an assemblage of a host and the many other species living in or around it, which together form a discrete ecological unit through symbiosis, though there is controversy over this discreteness + E.g., Bacteria present in the roots of legumes benefit from the sugars produced by the plant and favour plant growth by supplying nitrogen.
- **Global Assessment Report on Disaster Risk Reduction (DRR) 2023** = Released by United Nations Office for Disaster Risk Reduction (UNDRR) + Theme: “Mapping Resilience for Sustainable Development Goals” + The number of recorded disasters has increased fivefold over the past 50 years + UNDRR (HQ: Geneva) was established in 1999 and is the custodian of the Sendai Framework for DRR 2015- 2030.
- **Scheme for Expansion and Modernization of Fire Services in the States** = It was launched, by the Union Ministry of Home Affairs, from the earmarked allocation of the Preparedness and Capacity Building Funding Window under the National Disaster Response Fund (NDRF) + The scheme is based on recommendations of the 15th Finance Commission + It allows an allocation of 12.5 per cent of each of the NDRF and State Disaster Response Fund (SDRF) for the Funding Window of Preparedness and Capacity Building + To avail funds under the Scheme, the respective State Governments must provide 25% of the total project cost from their budgetary resources. North-Eastern and Himalayan (NEH) States shall have to contribute 10%.
- **Kaas Plateau** = Kaas Plateau or Pathar, also known as Valley of Flowers + Satara District, Maharashtra + It falls in the biosphere of the Western Ghats + It is made of igneous rocks + This plateau is inscribed in the UNESCO World Natural Heritage Site list under the Western Ghats + Its name is derived from the Kaasa tree, botanically known as Elaeocarpus glandulosus (rudraksha family).
- **Anthropocene Epoch** = The term was first coined by Nobel Prize-winning chemist Paul Crutzen and biology professor Eugene Stoermer in 2000 + not yet formally established as a new geological epoch, but several geologists and Earth system scientists propose its beginning to the mid-20th century + The Anthropocene epoch is a proposed epoch that denotes the present geological time interval in which Earth's ecosystem has undergone radical changes due to human impact, especially since the onset of the Industrial Revolution + Numerous phenomena are associated with this epoch, such as global warming, sea-level rise, ocean acidification, mass-scale soil erosion, deadly heat waves etc + Earth's geological time scale is divided into five broad categories: eons, epochs, eras, periods, epochs and ages + Officially we're in the Phanerozoic eon, Cenozoic era, Quaternary period, Holocene epoch and Meghalayan age + Meghalayan age (4200 years ago) began with an abrupt mega-drought that caused the collapse of several civilisations. Geologists found proof of this event in Meghalaya's Mawmluh Cave system
 - **6th Mass Extinction** = Recent study states that earth is going through its 6th mass extinction + Mass extinction event is usually defined as about 75% of the world's species being lost in a 'short' amount of geological time - less than 2.8 million years + There have been 5 mass extinctions so far. However, all of those were caused by natural phenomena + This time, it is being caused entirely by humans and hence referred to as Anthropocene extinction + Earlier mass extinctions are: Ordovician, Devonian, Permian, Triassic and K-T.
- **Water, Sanitation and Hygiene (WASH)** = Recently, World Health Organization (WHO) released a report ‘Burden of disease attributable to unsafe drinking-water, sanitation and hygiene (WASH)’ + WASH is a collective term for Water, Sanitation and Hygiene relating to:

Access to safe drinking water, Improved sanitation facilities and Maintaining basic level of hygiene + **SDG 6: Clean Water and Sanitation** aims to ensure the availability and sustainable management of water and sanitation for all.

➤ **World Food Programme(WFP)** = It was established in 1961 by the Food and Agriculture Organization (**FAO**) and the United Nations General Assembly (**UNGA**) and became a full-fledged UN programme in 1965 + **Headquarters: Rome, Italy** + World Food Programme (WFP) is the food-assistance branch of the United Nations + It is the world's largest humanitarian organization, the largest one focused on hunger and food security + In addition to emergency food relief, WFP offers technical assistance and development aid, such as building capacity for emergency preparedness and response, managing supply chains and logistics, promoting social safety programs, and strengthening resilience against climate change + The agency is also a **major provider of direct cash assistance and medical supplies** and provides passenger services for humanitarian workers.

➤ **State of Food Security and Nutrition in the World (SOFI) Report, 2023** = It is a joint publication by Food and Agriculture Organization, International Fund for Agricultural Development, UNICEF, UN World Food Programme and WHO + **Key findings – 122 million more people are facing hunger since 2019 due to the pandemic and repeated weather shocks and conflicts.**

➤ **Performance Grading Index (PGI) for School Education System** = Recently, the Ministry of Education released two reports, PGI 2.0 for States/UTs and PGI for Districts (PGI-D) + They assess the performance of school education system at the State and District level + Both reports took data from Unified District Information System for Education Plus (UDISE+) 2021-22 data and National Achievement Survey (NAS) 2021 for preparing report + It has classified the States/UTs and districts into ten grades. In decreasing order of grades- **Daksh** (highest grade), **Utkarsh, Atti-Uttam, Uttam, Prachesta-1,2 and 3, Akanshi-1, 2 and 3**(Lowest grade) + The PGI - States/UTs was first released for the year 2017-18 and so far it has been released up to the year 2020- 21.

➤ **The Paths to Equal Report** = Recently **UNDP and UN Women** jointly released ‘The Paths to Equal: Twin Indices on Women’s Empowerment and Gender Equality Report + The report introduces two new indices: **Global Gender Parity Index (GGPI)** and Women’s Empowerment Index (WEI) + No country has achieved full gender parity + **In India, gender parity was ‘low’ despite ‘medium’ human development +**

- **UN Women** = Established in 2010 + also known as United Nations Entity for Gender Equality and the Empowerment of Women + HQ at New York + It helps Inter governmental bodies in formulation of policies, implement these standards and hold the UN system accountable for its own commitments on gender equality.
- **UNDP** = Established in 1966 + Works in 177 countries including India + It aims to eradicate poverty and reduce inequalities + some of the famous reports are: Human Development Report and Global Multidimensional Poverty Index (GMPI)
- **Global Gender Parity Index (GGPI)** = Evaluates the status of women relative to men across four dimensions: Life and good health; Education, skill building and knowledge; Labour and Financial Inclusion and; Decision making.
- **Women’s Empowerment Index (WEI)** = Focuses solely on women, measuring their power and freedom to make choices and seize opportunities in life. It covers five dimensions + In addition to the four dimensions of GGPI, it also covers a new dimension Freedom from violence.

➤ **Sustainable Development Goals (SDG) Progress Report 2023** = Released by the UN Department of Economic and Social Affairs (UNDESA) + It monitors global progress on the 2030 Agenda for Sustainable Development + As per the report, **Progress on more than 50% of targets of SDGs is weak; on 30 %, it has stalled or gone into reverse + (UNDESA =**

Established- 1948 + HQ: New York + It is part of the UN Secretariat and assists countries around the world in agenda-setting and decision-making with the goal of meeting their economic, social and environmental challenges (including SDG Goals))

➤ **Institutional Development Plan (IDP) for Higher Education Institutions (HEIs)** = Recently, UGC passed guidelines for Institutional Development Plan (IDP) for Higher Education Institutions (HEIs) + National Education Policy (NEP) 2020 recognises the importance of IDP and recommends that each institution will make a strategic IDP + The necessity for IDPs arises from acknowledging that a uniform set of norms may not apply to all, as each HEI requires a different path to progress.

➤ **Chandrayaan-3** = It aimed to demonstrate soft landing on lunar surface, make a rover travel on moon surface and conduct in-situ scientific experiments + Chandrayaan-3 has made history by becoming the first mission to soft-land on the lunar south pole, a region that has never been explored before + India now joins the United States, Russia, and China as one of the few countries to successfully land on the Moon + Indian Space Research Organisation launched the Chandrayaan-3 Mission by using the Geosynchronous Satellite Launch Vehicle Mark III (LVM3) on 14th July 2023 from Sriharikota which placed the integrated module in an Elliptic Parking Orbit (EPO) + Chandrayaan 3 inserted into orbit on 5th August and it soft landed on 23 August + Chandrayaan-3 Mission consists of two modules - The propulsion module (PM) and the Lander module (LM, that is, Chandrayaan 3 contained only lander (Vikram) and rover (Pragyan) and NOT orbiter + The total lifespan of the Mission (Lander and Rover) is lunar day (14 Earth days) + Chandrayaan 3 although targeted near side but it also aimed to investigate "permanently shadowed regions" near the South Pole for potential water-ice and resources.

○ **Moon's Near Side & Far Side** = The near side refers to the portion of the moon — about 60% — that is visible from Earth + This side of the Moon always faces the Earth and it is the side that humans have visited during various lunar missions + The far side of the Moon is the side that is not visible from Earth. The reason it is less visible from Earth is due to a phenomenon called “tidal locking”. The phrase “dark side of the Moon” does not refer to “dark” as in the absence of light, but rather “dark” as in the unknown. In reality, both the near and far sides receive (on average) almost equal amounts of light directly from the Sun

○ **Moon's South Pole** = The lunar south pole is located at the southern end of the Moon's axis of rotation + Its craters have been untouched by sunlight for billions of years — offering an undisturbed record of solar system's origins + Its permanently shadowed craters are estimated to hold enough water that could potentially be used for future missions + It has traces of hydrogen, ammonia, methane, sodium, mercury, and silver — making it an untapped source of essential resources.

○ **Propulsion Payloads**

- Spectro-polarimetry of Habitable Planet Earth (**SHAPE**) = The SHAPE payload will conduct novel spectro-polarimetric studies of Earth from lunar orbit. It will look for smaller planets that could be habitable in the reflected light

○ **Lander Payloads**

- Radio Anatomy of Moon Bound Hypersensitive Ionosphere and Atmosphere (**RAMBHA**): To measure the plasma density fluctuations near the lunar surface
- Chandra's Surface Thermophysical Experiment (**ChaSTE**): To carry out the thermal traits of the moon's frigid polar zones
- Instrument for Lunar Seismic Activity (**ILSA**): To measure seismic activity, unveiling lunar crust-mantle configuration.
- LASER Retroreflector Array (**LRA**): To understand the dynamics of the Moon system

○ **Rover Payloads**

- **Alpha Particle X-ray Spectrometer (APXS)**: To determine the soil and rocks' chemical composition and mineral attributes
 - **LASER Induced Breakdown Spectroscopy (LIBS)**: To analyse elemental constitution, enriching lunar geology insights
- **LVM3 Rocket System** = LVM3 is the new launch vehicle of ISRO with the capability to place the modules into the **GTO** (Geosynchronous Transfer Orbit) in a cost-effective manner + It is a **three-stage launch vehicle** with two solid strap stages and one core liquid stage.
- **Recent Lunar Missions and planned missions**
 - **Danuri Mission** = South Korea + 2022
 - **Hakuto R Mission** = Japan + 2022 + Japanese payload and UAE rover + Crash landed.
 - **Luna 25** = Russia + Aimed at soft landing and sample gathering at southern pole + failed recently.
 - **Artemis II** = NASA (USA) + 2024 + Crewed mission to the moon
 - **Beresheet 2** = Israel + 2025 + lunar landing with 2 lander and orbiter.
- **Neutrinos** = They are **fundamental particles** (but not part of the atom), like electrons, so they can't be broken down into smaller parts + Very tiny mass, has **no charge and half spin** + Travel at almost the speed of light and in straight lines from their source + Rarely interact with other matter (therefore also referred to as **ghost particle**) + **Outnumber all the atoms** in the universe + Only affected by gravity and the weak force + 3 types – electron neutrino, tau neutrino and muon neutrino. They can change from one type to another as they travel. This process is called **neutrino oscillation** + Neutrinos are emitted from our galaxy, stars like Sun, and on Earth, neutrinos are produced when unstable atoms decay, which happens in the planet's core and nuclear reactor + Recently, For the first time, **scientists have seen neutrinos originating from the central disk of the Milky Way**. Data was collected by the **IceCube Neutrino Observatory** has produced the first view of the Milky Way galaxy through the lens of neutrino particles.
- **Milky Way Galaxy** = A galaxy is a huge collection of gas, dust, and billions of stars and their solar systems, all held together by gravity + Galaxies can be spiral-shaped (e.g. Milky Way), elliptical (largest and most common galaxies observed) or irregular (among the smallest galaxies) shaped + Earth is in the Milky Way Galaxy + Sometimes galaxies get too close and smash into each other. Milky Way galaxy will someday bump into Andromeda, our closest galactic neighbor + There are also satellite galaxies, that orbit a galaxy. Milky Way has a number of satellite galaxies, but the biggest one is the Large Magellanic Cloud.
- **IceCube Neutrino Observatory** = IceCube Neutrino Observatory is a neutrino observatory constructed at the **Amundsen–Scott South Pole Station in Antarctica** + 58 institutions (none from India) in 14 countries make up the IceCube Collaboration + U.S. National Science Foundation (NSF)- an independent federal agency provides the primary funding for the IceCube Neutrino Observatory + It is the first detector of its kind, designed to observe the cosmos from deep within the South Pole ice and searches for neutrinos.
- **Atmospheric Neutrinos** = They are typically **produced around 15 kms above Earth's surface** + They are produced from cosmic rays which consist of protons and heavy nuclei + These **collide with atmospheric molecules such as Nitrogen to give off pions and muons** which further decay to produce neutrinos.
- **UNAIDS Global AIDS Update 2023** = UNAIDS released 'The Path that Ends AIDS' report + AIDS-related deaths: Reduced by 69% since the peak in 2004 + Decrease in the number of new HIV infections and AIDS (Acquired Immunodeficiency Syndrome)-related deaths is

helping to achieve SDG 3.3 of ending AIDS as a public health threat by 2030 + Almost 76% of people living with HIV globally receive life-saving treatment.

- **HIV** = HIV is a virus that attacks the body's immune system + If not treated, it can lead to AIDS + It targets the immune system and weakens people's defence against many infections and some types of cancer + May be caused by one of two retroviruses, HIV-1 or HIV-2 and **HIV-1 is more prevalent worldwide** + HIV in infected people progress in three stages (see infographic) in the absence of effective medicine + Treatment: Can be managed (not cured) by treatment regimens composed of a combination of three or more antiretroviral drugs + HIV mainly **attacks CD4 immune cells** (type of white blood cell) in human body, thereby reducing a person's ability to fight off secondary infections + CCR5 receptors on surface of CD4 immune cells act as a doorway for HIV virus + **Luc Montagnier won Nobel Prize** for Medicine in 2008 for discovery of the HIV that causes AIDS.

- **Chromodomain Helicase DNA Binding Protein 1 Like (CHD1L)** = A study has revealed that CHD1L gene variant is likely to control HIV + A variant of CHD1L gene is specifically present in African population + CHD1L gene variant has been linked to reduced viral load (amount of HIV in blood) of HIV-1 (most common) + The gene variant CHD1L is found on chromosome 1.

- **Bharat 6G Alliance (B6GA)** = Launched by Department of Telecommunication (DoT) + B6GA is a collaborative platform comprising public and private companies, academia, research institutions, and Standards development organisations + It will forge coalitions and synergies with other 6G Global Alliances, fostering international collaboration and knowledge exchange + 6G is the successor of 5G with ability to use higher frequencies (**Sub-6 GHz and 95 GHz to 3 THz (Terahertz)**) with greater speed (Up to 1,000 Gbps) and lower latency (1 millisecond) + Significance of 6G: Support high-performance computing, edge computing, Technology Convergence etc.

- **Telecom Technology Development Fund (TTDF)** = TTDF scheme was launched by Universal Service Obligation Fund (USOF) in 2022 + USOF is a body under Department of Telecommunication (DoT) + 5% of annual collections from USOF are available for TTDF for funding **R&D in rural specific communication technology** applications and form synergies among academia, start-ups, and industry to build and develop a telecom ecosystem.

- **Universal service Obligation Fund (USOF)** = Ministry of Communication + 2002 + Funds come from the Universal Service Levy (USL) of 5% charged from all the telecom operators on their Adjusted Gross Revenue (AGR) which are then deposited into the Consolidated Fund of India, and require prior parliamentary approval to be dispatched + It is headed by the USOF Administrator who reports to the Secretary, Department of Telecommunications (DoT) + USOF is a ₹55,000-crore state reserve + It provides subsidies to ensure telegraph services are provided to everyone across India, especially in the rural and remote areas + The USOF works through a bidding process, where funds are given to the enterprise quoting the lowest bid. However, the funds for National Optical Fibre Network(NOFN) or BharatNet Project were made an exception to this process since BBNL was the sole party involved in the implementation having being specifically created for it.

- **Bharat Net Project** = Ministry of Communication + was originally launched in 2011 as the National Optical Fibre Network(NOFN) and renamed as Bharat-Net in 2015 + It seeks to provide **connectivity to 2.5 lakh Gram Panchayats (GPs)** through optical fibre + It is a flagship mission implemented by **Bharat Broadband Network Ltd.** (BBNL) + The objective is to facilitate the delivery of e-governance, e-health, e-education, e-banking, Internet and other services to rural India + Vision of the project is to establish a **highly scalable network infrastructure**, provide on demand connectivity of 2 Mbps to 20 Mbps for all households and institutions; and to realise the vision of

digital india, in partnership with states and the private sector + The project is a **Centre-State collaborative project**, with the **States contributing free Rights of Way** for establishing the Optical Fibre Network + The entire project is being funded by Universal service Obligation Fund (USOF), which was set up for improving telecom services in rural and remote areas of the country.

- **Digital Communication Innovation Square (DCIS)** = Launched by Department of Telecommunications (DOT) + Major objectives to promote the ecosystem for research, design, development, proof of concept testing, IPR creation, pilot project and manufacturing i.e. complete value chain to make India a global hub for production of telecommunication equipment and a centre for digital communication services.
- **Majorana Zero Modes** = Microsoft announced Majorana zero modes to revolutionise quantum computing + Majorana zero modes could help build quantum computers that are much less fragile than they are today, making them computationally superior + All particles in nature are either bosons or fermions. Bosons carry energy and forces throughout the universe. All subatomic particles that makeup matter are called fermions + In 1928, Physicist Paul Dirac predicted the existence of an antiparticle for each particle, such that if the two meet, they annihilate each other. Based on his prediction, scientists found the first antiparticle, the positron (or the anti-electron) + Later Physicist Ettore Majorana predicted particles that satisfied certain conditions to be their antiparticles. In his honour, fermions that are their own antiparticles are called Majorana fermions (neutrinos are considered to be Majorana fermions) + Pair, or bound states, of fermions that are their own antiparticles, are called Majorana zero modes.
- **Robomapper** = RoboMapper is a robot (created by Researchers US) + It helps in testing material more precisely and quickly + Recently, RoboMapper has identified perovskite materials used in solar cells that have more stability and efficiency.
- **Euclid Mission** = ESA's (European Space Agency) + Euclid aims to investigate cosmic mysteries of dark matter and dark energy. It will make a **3D map of the Universe** by observing billions of galaxies (Universe composed of: 68% dark energy, ~27% dark matter, and ~5% normal matter) + Euclid has a reflecting telescope that feeds the two instruments: a visible-wavelength camera (VIS) and Near-Infrared Spectrometer and Photometer (NISP) + It will travel towards Sun-Earth Lagrange point 2.
- **Sagar Sampark** = Indigenous Differential Global Navigation Satellite System (DGNSS) – “SAGAR SAMPARK” was inaugurated by the Ministry of Ports, Shipping and Waterways (MoPSW) + DGNSS is a terrestrial-based enhancement system which corrects errors and inaccuracies in Global Navigation Satellite System (GNSS), allowing for more accurate positioning information + DGNSS will help in fulfilment of international navigation obligations of the International Maritime Organisation (IMO), Safety of Life at Sea (SOLAS) and International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) (IALA: Established in 1957, it is a non-profit, international technical association) + GNSS refers to a constellation of satellites providing signals from space that transmit positioning and timing data to GNSS receivers to have Global coverage + Major GNSS are: GPS (USA), GLONASS (Russia), Galileo (Europe), BeiDou (China), NAVIC(India).
- **Solar Flare** = Solar flares are giant explosions on the sun that send energy, light, and high-speed particles into space + These flares are often associated with solar magnetic storms known as coronal mass ejections (CMEs) + It happens when energy stored in ‘twisted’ magnetic fields (usually above sunspots) is suddenly released + Solar Flares are classified according to their strength. The smallest are A-class, followed by B, C, M, and X, the largest. Each letter represents a 10-fold increase in energy output.
- **100 Microsites Project** = National Health Authority (NHA) launched the 100 Microsites Project under Ayushman Bharat Digital Mission (ABDM) + Microsites Project was launched to accelerate digital health adoption across the country + Microsites aim to establish a small

ecosystem within a particular geographic area where there is complete ABDM adoption and the entire patient journey is digitised + **Microsite** is a cluster of healthcare stakeholders (all healthcare providers, pharmacies etc.) interconnected by common characteristics + NHA is the apex body responsible for implementing **Ayushman Bharat Pradhan Mantri Jan Arogya Yojana** and ABDM. NHA is governed by a Governing Board chaired by Union Minister for Health and Family Welfare (MoH&FW).

➤ **One Health Priority Research Agenda for Antimicrobial Resistance (AMR)** = It was released by FAO, UN Environment Programme (UNEP), WHO and World Organisation for Animal Health (WOAH) to better advocate for increased research and investment in AMR + Agenda presented a five-pillar based one health approach to tackle the growing threat of AMR, including: Transmission, Integrated surveillance, Interventions, Behavioural insights and change and Economics and policy + Please Note: AMR occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death.

➤ **Malaria Vaccine** = World Health Organization's (WHO) approved RTS, S/AS01 (Mosquirix) in 2021 developed by GlaxoSmithKline for immunizing children against malaria was a big milestone after decades of gradual progress + RTS,S/AS01, trade name Mosquirix, is an injectable vaccine targeting P. falciparum, the most prevalent malaria strain in Africa + it is a recombinant protein vaccine (RPV) + It is the first and only vaccine to show partial protection in young children + Recently, 18 million doses of the first-ever malaria vaccine RTS, S/AS01, were allocated to 12 African countries for 2023-25 by WHO, GAVI and UNICEF.

- **Recombinant Protein Vaccine (RPV)** = RPVs are a type of Recombinant Subunit Vaccines (RSVs) that use protein as antigen + RSVs rely on the capacity of one or multiple defined antigens (a subpart of a pathogen like proteins, peptides, DNAs, etc., that causes the formation of antibodies) to induce immunity against the pathogen + RPVs are considered safer as compared to vaccines derived from live viruses as they are nonreplicating and lack any infectious components of viral particles.
- **Malaria** = It is a life-threatening vector-borne disease caused by Plasmodium (parasite) + Vector: Female Anopheles mosquito + Symptoms: High fevers, shaking chills, and flu-like illness + Four kinds of malaria parasites infect humans: P. Falciparum, P. vivax, P. ovale, and P. malariae + In addition, P. knowlesi naturally infects macaques in Southeast Asia, also infects humans (zoonotic malaria) + Illness and death from malaria are both preventable as well as curable.
- **Anopheles Stephensi** = A deadly malaria vector, transmitter Anopheles Stephensi, has been detected in Kenya + Anopheles Stephensi originated in Southeast Asia, West Asia and Arabian Peninsula + Malaria is an acute febrile illness caused by Plasmodium parasites, which are spread to people through the bites of infected female Anopheles mosquitoes + There are 5 parasite species that cause malaria in humans, and 2 of these species – P. falciparum and P. vivax – pose greatest threat.
- **Global Alliance for Vaccine and Immunization (GAVI)** = It was set up as a Global Health Partnership in 2000 + Core partners: WHO, World Bank, UNICEF, and Bill & Melinda Gates Foundation + It is critical to strengthen primary health care and bring us closer to the Universal Health Coverage (SDG 3).

➤ **BPaL Regimen Trial** = BPaL is a six-month, all-oral, three-drug regimen that is used to treat people with highly drug-resistant forms of TB (i.e., XDR TB) + It consists of the pretomanid and two other antibiotics: Bedaquiline and Linezolid + XDR TB is a rare type of multidrug-resistant tuberculosis (MDR TB) that is resistant to isoniazid, rifampin, fluoroquinolone, and a second-line injectable (amikacin, capreomycin, and kanamycin) + For tuberculosis, an over 85% cure rate was seen in the modified BPaL regimen trial.

➤ **Zombie Drug** = Xylazine, also known as “tranq,” “tranq dope”, and “zombie drug”, has sedative-like symptoms such as **extreme sleepiness** + Tranq is known for its ability to induce a “zombie” like stupor and cause flesh rot near injection sites + In February 2023, it was found that drugs were the cause of last year’s (2022) viral videos of people unable to stand and acting weird on the streets of the United States. These drugs have been termed ‘zombie drugs’.

➤ **Global Food Regulators Summit 2023** = Global Food Regulators Summit 2023 is being organized in Delhi for the first time, as a G20 event + The summit is being organized by Food Safety and Standards Authority of India (FSSAI) under the aegis of the Ministry of Health and Family Welfare + The theme of the summit, “One Earth, One Family, One Future,” aligns perfectly with India’s G20 Presidency + Summit saw launch of three initiatives:

- **Food-o-Copoeia** = a comprehensive collection of food category-wise monographs, serving as a single-point reference for all applicable standards for specific product categories.
- **SaNGRAH** = Common regulators platform + 'SaNGRAH' (Safe food for Nations: Global food Regulatory Authorities Handbook) + It is a comprehensive database of Food Regulatory Authorities from 76 countries worldwide, presenting their mandates, food safety ecosystems, food testing facilities, contact details for food authorities, and information related to SPS/TBT/Codex/ WAHO + SaNGRAH is available not only in Hindi and English but also in six Indian languages—Gujarati, Marathi, Tamil, Telugu, Kannada, and Malayalam.
- **Common Digital Dashboard** = a unified IT portal providing comprehensive information on standards, regulations, notifications, advisories, guidelines, contamination limits, and the latest developments by Food Regulators in India.

➤ **Blue Sky Project** = Recently, The Government has released a draft R&D roadmap for the **green hydrogen ecosystem in India**, which stresses on developing fuel cells for long-range travel, particularly for the road transport sector + The roadmap has proposed three key approaches for promoting R&D: mission mode, grand challenge projects and blue-sky projects + Blue-sky projects are projects having a long-term (0 - 15 years) horizon would be taken up with a focus on establishing global IP and competitive advantage for the Indian industry+ Blue Sky projects will aim to develop capabilities of the Indian R&D sector within an array of subjects like the development of 3rd generation electrocatalysts, reversible Solid Oxide Electrolyzers (SOECs) and Solid Oxide Fuel Cells (SOFCs), thermochemical water splitting for hydrogen production etc.

➤ **Direct Methanol Fuel Cells (DMFCS)** = DMFC is an electrochemical energy conversion device that directly converts liquid methanol's chemical energy into electrical energy + DMFCs have a high energy density, high efficiency and low operating temperature and are safer to operate as they deal with liquid fuel (methanol) + Application: an alternate power source for small vehicles, such as battery chargers for mobile phones, digital cameras, laptops, and other small electronic gadgets etc + Recently, An alloy of Cobalt and Platinum doped with Manganese has been found to be an effective catalyst in DMFCs.

➤ **Mihir Bhoja** = A prominent 9th century ruler from Gurjar – Pratihara dynasty + He succeeded his father Rambhadra and ascended to the throne in 836 CE + He adopted the title of Adivaraha (devotee of Lord Vishnu). Also, some of the coins from his era feature the term Adivaraha + Arab merchant Sulaiman described him as one of the greatest Gurjara – Pratihara emperors + He was also a great patron of art and literature. Poet Rajsekha adorned his court + Various inscriptions at Varaha, Daulatpur, Kahala, Pahewa, etc., indicate his control over Malwa, Rajputana, Madhyadesh + Kalhana’s Rajatrangini mentions the **expanses of his empire to Kashmir in the north** + He was also involved in **tripartite struggle** for Kannauj with Palas in the East and Rashtrakutas in the Deccan + During his reign, Amoghavarsa and Krishna II were

Rashtrakuta kings ruling over Kannauj. Bhoja captured Kannauj from Rashtrakutas and extended his empire up to the river Narmada.

- **Alluri Sitaram Raju** = Born in present-day Andhra Pradesh in 1897 or 1898 + He is said to have become a sanyasi at the age of 18, and gained a mystical aura among the hill and tribal peoples + British Raj passed the Madras Forest Act in 1882 which effectively restricted the free movement of Adivasis (tribal groups) in their forest habitats and banned them from practising a traditional style of agriculture known as podu (Traditional agriculture practice) + Alluri Seetarama initiated the famous "Rampa Rebellion" or Manyam Rebellion in 1922-1924 against the Forest Act in Visakhapatnam-Godavari agency area of the then Madras Presidency. Local people dubbed him "Manyam Veerudu" (Jungle Hero) because of his heroic deeds + Rampa Rebellion coincided with Mahatma Gandhi's Non-Cooperation Movement + He was also a member of a Calcutta Secret Society where he learnt to make bombs + Recently, the yearlong celebration of the 125th Birth Anniversary of Shri Alluri Sitarama Raju and 100 years of the Rampa Rebellion concluded in Hyderabad.
- **Bastille Day** = Recently Prime Minister of India attended Bastille Day Parade as a Guest of Honour in France + July 14 marks the anniversary of the storming of the Bastille prison on 14th July 1789, which marks the beginning of the French Revolution (FR) + Bastille was a 14th-century fortress prison in Paris that was hated by all because it stood for the despotic power of the king.
- **Anubhava Mantapa** = of Lord Basaveshwara + It was established by Lord Basaveshwara to facilitate gathering for philosophy and experience + Anubhava Mantapa was one of the earliest Parliament in history of mankind + Prabhudeva, a great Yogi, was the President and Lord Basava acted as the Prime Minister + Only difference between the present-day parliament and Anubhava Mantapa is that members were not elected by people but were picked up or nominated by higher authorities of Mantapa + (Lord Basaveshwara (1105-1167) = He was a 12th century poet and born in Karnataka + Known for Socio-Religious Reforms, Anubhava Mantapa, Vachana Literature and Lingayat Movement in south India + Basava Purana, written by Palkuriki Somanatha in 13th-century, holds full account to Basavanna's life and ideas) + Recently, International Exhibition-cum-Convention Centre (IECC) at Pragati Maidan, New Delhi, has been named 'Bharat Mandapam'. Bharat Mandapam – derives its root from Lord Basaveshwara's (12th century) idea of Anubhav Mantapa.
- **Porpanaikottai Site** = Located in Pudukkottai district of Tamil Nadu + A gold stud, a bone point and a carnelian bead belonging to Sangam Age have been excavated at the Porpanaikottai site in the Pudukkottai district of Tamil Nadu + The Excavation site indicated a burial site, and the fort area showed signs of water bodies inside the site. The discovery of a carnelian bead (generally found in the Northern part of India) Indicated a trade within the country
- **Tankai Shipbuilding Method** = Ministry of Culture and Indian Navy to launch a project to revive the 2000-year-old technique of shipbuilding known as the Tankai method + In this method, the ship is constructed by stitching wooden planks together rather than using nails + This method offered flexibility and durability, making them less susceptible to damage from shoals and sandbars + The arrival of European ships led to a shift in shipbuilding techniques
- **Zo People** = Zo people include all tribes of the Chin-Kuki-Mizo ethnic group spread across Myanmar, India, and Bangladesh + Many sub-tribes and clans include the Chin, Kuki, Mizo, Lushei, Zomi, Paitei, Hmar, Ralte, Pawi, Lai, Mara, Gangte, Thadou, etc + Tribes are believed to have migrated from China through Tibet to settle in Myanmar + They speak a group of Tibeto-Burman languages.
- **Ker Puja** = Tripura + It is a festival celebrated in Tripura two weeks after Kharchi Puja and honours Ker, a guardian god + During the festival, entrances to Agartala are closed to create a protected area, and people are not allowed to light fires, dance, sing or even wear shoes + It is also held in a few other northeastern states and in the Chittagong Hill Tracts in Bangladesh.

- **Pradhan Mantri Shram Yogi Maan Dhaan (PM-SYM)** = Central Sector Scheme + Ministry of Labour and Employment + It is implemented through Life Insurance Corporation of India and CSC e-Governance Services India Limited (CSC SPV) + It is a voluntary and contributory pension scheme, under which the subscriber would receive a minimum assured pension of Rs 3000/- per month after attaining the age of 60 years + Eligibility: unorganised workers (home based workers, street vendors, mid-day meal workers, head loaders, landless labourers and similar other occupations) whose monthly income is Rs 15,000/- per month or less. The Subscriber should belong to the entry age group of 18-40 years. They should not be covered under New Pension Scheme (NPS), Employees' State Insurance Corporation (ESIC) scheme or Employees' Provident Fund Organisation (EPFO). He/She should not be an income tax payer + Union Government will give equal matching contribution as done by subscriber in the pension account + Once the beneficiary joins the scheme at the entry age of 18-40 years, the beneficiary has to contribute till 60 years of age + Please Note: if the subscriber dies, the spouse of the beneficiary shall be entitled to receive 50% of the pension as family pension. Family pension is applicable only to spouse.
- **Guayaquil** = Port city in Ecuador + The port city of Guayaquil in Ecuador (a route for cocaine trafficking from neighbouring Colombia to the United States and Europe) is grappling with a devastating battle for control among criminal gangs, leaving the country broken + Ecuador is on South America's west coast + Its diverse landscape encompasses the Amazon jungle, Andean highlands and the wildlife-rich Galápagos Islands.

PIB and Other Monthly - July (No Repetition)

Topics already covered in The Hindu and Vision Monthly are NOT repeated

- **India-France Maritime Partnership Exercise** = Indian Naval ships INS Rana and INS Sumedha undertook a Maritime Partnership Exercise with French Navy ship FS Surcouf in the Bay of Bengal + INS Rana, a guided missile destroyer and INS Sumedha, an indigenously built offshore patrol vessel were from the Indian Navy side + Other Exercises with France: VARUNA: Naval Exercise; FRINJEX: Military Exercise; GARUDA: Air Force Exercise.
- **South Asia Regional Anti-Doping Organization (SARADO)** = Recently, the National Anti-Doping Agency, India (NADA India) signed a Memorandum of Understanding (MoU) with South Asia Regional Anti-Doping Organization (SARADO) in New Delhi + It was formed in May 2007 in the South Asian Anti-Doping Program Project Development Meeting held in Maldives + Member countries: Bangladesh, Bhutan, Maldives, Nepal and Sri Lanka + Mission: To promote and co-ordinate the fight against doping in sport in all its forms in among South Asia RADO member countries.
- **Sohagi Barwa Wildlife Sanctuary** = Uttar Pradesh + On the northern side, the Sanctuary shares the international boundary with Nepal, and on the eastern border is Bihar's Valmiki Tiger Reserve + It is drained by the great Gandak, the little Gandak, Pyas and Rohin rivers.
- **Statistics Day** = The Government of India celebrates Statistics Day every year on June 29th in honour of the late Professor Prasanta Chandra Mahalanobis, who made significant contributions to the fields of Economics, Planning, and Statistics + The theme of Statistics Day for 2023: 'Alignment of State Indicator Framework with National Indicator Framework for Monitoring Sustainable Development Goals.' + P C Mahalanobis (1893-1972) was an Indian scientist and statistician. He is best remembered for the Mahalanobis distance, referred to as the father of Indian statistics, founded the Indian Statistical Institute (ISI) and is one of the members of the first Planning Commission of free India. He made pioneering studies in anthropometry in India.
- **Duqm Port** = Oman + NSA visits Oman's Duqm port where Indian Navy has strategic access to facilitate its presence in Indian Ocean Region + The Port of Duqm is strategically important for India's maritime strategy in the Indian Ocean. It offers India access to the Gulf of Oman, the Red Sea, the Indian Ocean, and the Arabian Sea.
- **Light Combat Aircraft (LCA) Tejas** = It has recently completed 7 years of service + indigenously built fighter aircraft + It is the smallest and lightest Mukti-Role Supersonic Fighter Aircraft inducted into Indian Air Force in the year 2016 + designed by aeronautical development agency (ADA) + produced by Hindustan Aeronautics Limited (HAL) + single-seat + multi-role jet fighter + powered by single engine + can also carry out mid-air refuelling + pegged as world's smallest and lightest supersonic fighter aircraft in its class + limited reach of little over 400-km and will be mainly used for close air-to-ground operations (unlike Russian-origin Sukhoi-30MKIs or Rafale which have deep strike capability into enemy territory due to their long range) + equipped with state-of-the-art Satellite aided Inertial Navigation System.
- **Dharma Chakra Day** = Dharma Chakra Day is celebrated to commemorate Buddha's first teaching after attaining enlightenment. It is observed on the full moon day of Asadha in the Indian sun calendar. It is also observed as Guru Purnima, a day to honour spiritual teachers, by both Buddhists and Hindus + The dharma chakra or wheel of dharma is a widespread symbol used in Indian religions such as Hinduism, Jainism, and especially Buddhism. In Buddhism, the Dharma Chakra is widely used to represent the Buddha's Dharma (Buddha's teaching and the universal moral order) + Second most sacred day for Buddhists after Buddha Poornima (Vesak) + It is organized by Ministry of Culture in partnership with the International Buddhist Confederation (IBC) + Other Names: Asadha Poornima (India); Esala Poya (Sri Lanka); Asanha Bucha (Thailand).

Anthro

- **Tam Pà Ling Cave** = Northern Laos + New research published in Nature Communications has revealed that humans arrived in Southeast Asia much earlier than previously thought. The findings are based on evidence found in Tam Pà Ling Cave in northern Laos + Early human migration to Asia involved the arrival of Homo sapiens in Southeast Asia at least 68,000 years ago, according to recent evidence from Tam Pà Ling Cave in Northern Laos + The presence of Denisovans, an extinct human relative, further highlights the complexity of early human movements and interbreeding with other hominin species + Tam Pa Ling is a cave in the Annamite Mountains in northeastern Laos. It is situated at the top of Pa Hang Mountain, 1,170 m above sea level + Denisovans were an extinct group of hominins, or human relatives, known primarily from remains found in Siberia and Tibet. They lived hundreds of thousands of years ago and coexisted with Neanderthals and early modern humans.
- **eSARAS Mobile App** = The Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM) has launched the eSARAS mobile app to support the marketing of products made by women in self-help groups (SHGs) + The app aims to provide a platform for the marketing of authentic handicrafts and handlooms. The initiative aims to promote local products and enhance livelihood opportunities for SHG members.
- **India-Myanmar-Thailand Trilateral Highway** = India-Myanmar-Thailand Trilateral Highway (IMT Highway), a 1,360 km long route, is a highway under construction under India's Look East policy that will connect Moreh, India with Mae Sot, Thailand via Myanmar. Also, there is a proposal to extend it to Cambodia, Laos and Vietnam + According to the Union Ministry of Road and Transport, approximately 70% of the construction work on the India-Myanmar-Thailand Trilateral Highway has been completed.
- **Pichavaram Region** = Tamil Nadu + Pichavaram consists of a number of islands interspersing a vast expanse of water covered with mangrove forest. The Pichavaram mangrove Forest is one of the largest mangrove forests in India covering about 45 sq km of area. It is separated from the Bay of Bengal by a sand bar.
- **Bogibeel in Dibrugarh** = Assam + Bogibeel has Bogibeel Bridge. It is the longest rail-cum-road bridge in India, measuring 4.94 kilometres over the Brahmaputra river + Recently, Union Minister of Ports, Shipping & Waterways has laid the foundation stone for an Inland Waterways Transport (IWT) terminal at Bogibeel in Dibrugarh, Assam (by the bank of the River Brahmaputra (National Waterways 2))
- **Fukushima Daiichi Nuclear Power Station** = Japan
- **SWAMIH Investment Fund** = Ministry of Finance + Special Window for Affordable & Mid-Income Housing (SWAMIH) Fund + This is a government backed fund that was set up as a Category-II AIF (Alternate Investment Fund) debt fund registered with SEBI, launched in 2019 + SWAMIH Investment Fund was formed to complete construction of stalled, RERA-registered affordable and mid-income category housing projects which are stuck due to paucity of funds + Sponsored by Ministry of Finance and managed by SBICAP Ventures, a unit of State Bank of India.
- **Zaporizhzhya Nuclear Power Plant** = Ukraine.
- **Churachandpur District** = Manipur
- **Hydrazine Hydrate** = Hydrazine Hydrate is a chemical compound with the formula N₂H₄·H₂O. It is a colourless liquid that is widely used as a reducing agent, a chemical intermediate, an oxygen scavenger in the treatment of boiler water, and a rocket propellant. It has applications in industries such as pesticides, agrochemicals, water treatment, pharmaceuticals, polymer production, and fine chemicals + Gujarat Alkalies and Chemicals Ltd (GACL) (state PSU) has started dispatching indigenously made Hydrazine Hydrate, a chemical product used in various industries. This move aims to reduce India's dependence on imports from Europe.

- **Klotho** = Klotho is an enzyme that in humans is encoded by the KL gene and produced in Kidney + Circulating levels of soluble Klotho decrease with age and the Klotho gene is associated with increased risk of age-related diseases + A new study has revealed that Injecting ageing monkeys with a ‘longevity factor’ protein that can restore levels of Klotho, can improve their cognitive function, a study reveals + The findings could lead to new treatments for neurodegenerative diseases.
- **Brucellosis** = Brucellosis is a bacterial disease that mainly infects cattle, swine, goats, sheep and dogs + Humans can get infected if they come in direct contact with infected animals or by eating or drinking contaminated animal products or by inhaling airborne agents + According to the WHO, most cases of the disease are caused by ingesting unpasteurised milk or cheese from infected goats or sheep + Recently, A seven-year-old student from Kollam, India, has tested positive for Brucellosis, a bacterial infection that can spread from animals to humans.
- **Sushruta Jayanti** = It is celebrated annually on 15 July to honour the renowned surgeon sushruta, known as father of surgery.
- **SCALP Missiles** = SCALP is a long-range, air-launched, stand-off attack missile designed and developed by France + also known as Storm Shadow.
- **BHARAT Campaign** = Ministry of Agriculture & Farmers Welfare, has launched a new campaign titled BHARAT (Banks Herald Accelerated Rural & Agriculture Transformation) under the Agri Infra Fund (AIF) + The one-month-long campaign aims to raise Rs 7200 crore + AIF is a financing facility launched in July 2020 to provide all-around financial support to farmers, agri-entrepreneurs, FPOs, PACS, Cooperatives, SHGs etc, to create post-harvest management infrastructure and build community farming assets throughout the country.
- **Agriculture Infrastructure Fund(AIF)** = It is a medium-long term debt financing facility through interest subvention and credit guarantee support on loans for investment in viable projects for post-harvest management infrastructure and community farming assets + Central Sector Scheme + Launched in 2020 + Duration: Extended to 13 years (FY2020 to FY2032) + For APMCs, interest subvention for a loan up to Rs. 2 crores will be provided for each project of different infrastructure types + NABARD will steer this initiative in association with the Ministry of Agriculture and Farmers' Welfare + Intended beneficiaries: Primary Agricultural Credit Societies (PACS), Marketing Cooperative Societies, Farmer Producers Organizations (FPOs), Self Help Group (SHG), Farmers, Multipurpose Cooperative Societies, Agrientrepreneurs, Startups etc.
- **Advance Authorisation Scheme** = The Directorate General of Foreign Trade (DGFT) has implemented the Advance Authorisation Scheme under the Foreign Trade Policy, which allows duty-free import of inputs for export purposes + It allows the duty-free import of inputs, which are physically incorporated into an export product + In addition to any inputs, packaging material, fuel, oil, and catalyst which is consumed/utilized in the process of production of export product, is also allowed + DGFT provides a sector-wise list of Standard Input-Output Norms (SION)under which the exporters may choose to apply + Advance Authorization is valid for 12 months from the date of issue of such Authorization.
- **East Africa Crude Oil Pipeline (EACOP) Project** = East Africa Crude Oil Pipeline (EACOP) project, connecting the Tilenga and Kingfisher oilfields in western Uganda with the port of Tanga in eastern Tanzania, has raised concerns over its impact on ecosystems and exacerbating the global climate crisis + The pipeline's construction will disrupt sensitive ecosystems, including Uganda's Murchison Falls National Park and the Murchison Falls-Albert Delta Ramsar site.