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Topic 1. ABOUT 240 MN PCS CAN END UP IN LANDFILL ON MS MOVE***Important for the subject: Environment***

Microsoft Corp's plan to **end support for Windows 10 operating system** could result in about **240 million** personal computers (PCs) being disposed, potentially adding to landfill waste.

- The electronic waste from the PCs could weigh about 480 million kg, equivalent to 3.2 lakh cars.

What is E-Waste?

- E-Waste is short for **Electronic-Waste** and the term is used to describe **old, end-of-life or discarded electronic appliances**. It includes their components, consumables, parts and spares.
- **Laws to manage e-waste** have been in place in **India** since **2011**, mandating that **only authorized dismantlers and recyclers collect e-waste**. **E-waste (Management) Rules, 2016** was enacted in **2017**.
- **India's first e-waste clinic** for segregating, processing and disposal of waste from household and commercial units has been set-up in **Bhopal, Madhya Pradesh**. Originally, the **Basel Convention (1992)** did not mention **e-waste** but later it addressed the issues of **e-waste in 2006 (COP8)**.
- The **Nairobi Declaration** was adopted at **COP9** of the **Basel Convention on the Control of the Trans-boundary Movement of Hazardous Waste**. It aimed at creating innovative solutions for the environmentally sound management of electronic wastes.

What are the Provisions regarding E-waste in India?

- **India** has a formal set of rules for electronic waste management, first announced these rules in **2016** and amended it in **2018**.
- The **Ministry of Environment, Forest and Climate Change** notified the **E-Waste Management Rules, 2016** in supersession of the **E-waste (Management & Handling) Rules, 2011**.
- Over 21 products (Schedule-I) were included under the purview of the rule. It included **Compact Fluorescent Lamp (CFL) and other mercury containing lamps**, as well as other such equipment.
- For the first time, the rules brought the producers under **Extended Producer Responsibility (EPR)**, along with targets. Producers have been made responsible for the collection of E-waste and for its exchange.
- Various producers can have a separate **Producer Responsibility Organisation (PRO)** and ensure collection of **E-waste**, as well as its disposal in an environmentally

sound manner.

- **Deposit Refund Scheme** has been introduced as an additional economic instrument wherein the producer charges an additional amount as a deposit at the time of sale of the electrical and electronic equipment and returns it to the consumer along with interest when the end-of-life electrical and electronic equipment is returned.
- The **role of State Governments** has been also introduced to ensure safety, health and skill development of the workers involved in dismantling and recycling operations. A provision of penalty for violation of rules has also been introduced.
- **Urban Local Bodies (Municipal Committee/Council/Corporation)** have been assigned the duty to collect and channelize the orphan products to authorized dismantlers or recyclers.
- Allocation of proper space to existing and upcoming industrial units for e-waste dismantling and recycling.

Topic 2. UNPACKING THE FIRST EVER COP 'HEALTH DAY'

Important for the subject: Environment

COP28 :

Hosted by the **UAE**, focused on the **link between climate change and public health crises**. Emphasized the severe **health threats** posed by **climate change**, particularly impacting **marginalized communities** and **low- to middle-income countries**.

- Highlighted the need for an **accelerated phase-out of fossil fuels for global health**.

Climate Change and Health:

- **Heat-Related Illnesses:** Rising global temperatures cause severe and frequent heatwaves, leading to conditions like heatstroke, dehydration, and heat exhaustion, resulting in higher illness and death rates.
- **Vector-Borne Diseases:** Climate changes affect disease carriers like mosquitoes and ticks, expanding diseases such as malaria, dengue fever, and Lyme disease due to warmer temperatures and altered precipitation patterns.
- **Waterborne Diseases:** Altered rain patterns and flooding impact water quality, spreading diseases like cholera and dysentery.
- **Air Quality and Respiratory Issues:** Intensified wildfires due to climate change release harmful pollutants, worsening respiratory conditions and increasing respiratory illnesses.
- **Extreme Weather Events:** Hurricanes, floods, and storms become more frequent and intense, causing injuries, displacements, and disruptions to healthcare, making it challenging to respond to health crises.

- **Food Security and Nutrition:** Changing weather patterns affect crop yields, leading to food shortages, malnutrition, and insecurity.
- **Psychological Stress:** Natural disasters and extreme weather events contribute to anxiety and depression due to displacement, property loss, and uncertainty about the future.
- **Reduced Access to Clean Water:** Shifts in precipitation and increased evaporation cause water scarcity, leading to waterborne diseases and hygiene-related health problems.
- **Disproportionate Impact on Vulnerable Groups:** Vulnerable communities like the elderly, children and low-income groups suffer more due to limited resources, inadequate healthcare, and exacerbated health disparities.
- **Displacement and Conflict:** Climate-induced events force people to relocate, exposing them to health risks due to poor living conditions, lack of healthcare, and potential conflicts over resources.

Health Day and Initiatives:

- **Inaugural Health Day** underscored the **importance of health in climate decisions**. Leaders urged for prioritizing health in climate talks, leading to the **COP28 UAE Declaration on Climate and Health** supported by **143 countries, not signed by India**.
- A key pillar of the declaration is the commitment to partner with women, girls, children, and youth.
- A climate-health ministerial brought together global ministers to discuss a roadmap for addressing climate-related health impacts.

India's Climate Challenges:

- India has experienced a surge in extreme weather events impacting lives, crops, homes, and livestock.
- Rising air pollution, and health challenges like malaria and malnutrition, pose threats to India's public health infrastructure.
- The Reserve Bank of India highlighted potential economic risks linked to heat-related challenges.

Need for Health Integration in India's Climate Planning:

- **Over 700 million people** reliant on climate-sensitive sectors for **livelihoods**. **Integrating health into climate planning** is crucial for immediate threat mitigation, resilience building, and sustainable development.
- **Economic benefits** include reduced healthcare costs, increased productivity, and effective climate actions.

Topic 3. NEMATOCYST: A CELLULAR WEAPON

Important for the subject: Environment

Nematocysts' Role in Defense and Hunting:

Nematocysts are **specialized cells** found in **jellyfish, corals, sea anemones, and hydras**, and act as **potent weapons** for defence and hunting.

- **Composed of capsules** containing **coiled tubules** and **toxins**, **nematocysts** rapidly eject these tubules with extreme acceleration when triggered.
- **Nematocysts** play a **crucial role** in the **feeding and defence strategies** of **cnidarians** in particular. **Cnidarians** are **animals that contain cells** called **cnidocytes**.
- When potential prey comes into contact with a **cnidocyte**, specialised sensory structures on the cell's surface trigger the release of the nematocyst. The tubule then unfurls, piercing the prey's outer layer or injecting toxins into its body.

Variety of Toxins:

- Toxins within nematocysts have diverse effects: some **paralyze prey**, while others **break down cells**. **Cnidarians** employ a combination of toxins for effective predation or defence.

Adaptation for Survival:

- Nematocysts' complexity contributes to cnidarians' success in diverse aquatic environments.
- This adaptation makes cnidarians formidable creatures, aiding in their survival and dominance in various ecosystems.

Topic 4. FLOWERING PLANT UNDOES 100 MILLION YEARS OF EVOLUTION, SHOWS SIGNS OF SELF-POLLINATION

Important for the subject: Environment

Scientists found a **field pansy flower** (native to **Europe, western Asia, and North Africa**) in **Paris, France**, producing **less nectar** and **smaller flowers** to **attract fewer pollinators**, indicating **rapid evolution**.

- Researchers planted **older seeds** from the **1990s and 2000s** against **contemporary descendants**, witnessing the **rapid evolution of plant behaviour within 50 years**.
- A **documented 27% increase in self-pollination rates** and **trait evolution** towards **smaller, less conspicuous flowers** with **reduced nectar production** was observed across four populations.

Significant outcome:

- The field pansy (*Viola arvensis*) has evolved self-pollination behaviour, posing a threat to the plant-pollinator relationship.
- Flowers in Paris exhibited a 20% decrease in nectar production and a 10% reduction in size, observed by comparing contemporary and older flower varieties.
- The plant evolved to self-pollinate due to declining insect availability, disrupting the conventional reliance on insects for pollination.
- Plants typically produce nectar to attract insects for pollination, a mutually beneficial relationship established over millions of years.

Concerns:

- While the short-term benefit of self-pollination helps plants, it poses threats due to environmental changes, potentially impacting plant population survival.
- Decreased nectar production may lead to food scarcity, contributing to further declines in pollinators, and forming a cycle detrimental to both plants and pollinators.

Topic 5. THE PESTICIDE HAZARD: EATING AWAY THE LIVES OF FARMERS IN MAHARASHTRA

Important for the subject: Environment

Borisinh village, amidst agricultural fields, reflects the continuous plight of farmers suffering from pesticide poisoning in Maharashtra. Certain insecticides were temporarily banned in 2017 and 2018 in several districts due to poisoning cases.

Committees and Pesticide Bans:

- **Anupam Verma Committee (2015):** Reviewed 66 pesticides, and recommended banning 27.
- **SK Malhotra Committee (2017):** Sought a review on banning the same 27 pesticides.
- **Registration Committee (2018) and S K Khurana Committee (2020):** Both recommended banning the same 27 pesticides.
- **Rajindran Committee (2022):** Recommended banning three pesticides. **Highly hazardous pesticides**, like **Monocrotophos** and **Polo**, are still used extensively in Maharashtra, causing health issues.

Pesticides:

- Substances intended for pest control in agriculture, food production, and animal care. Examples: fungicides, herbicides, insecticides.
- **Examples of Synthetic Chemical Pesticides:** Glyphosate, Acephate, Deet, Propoxur, Metaldehyde, Boric Acid, Diazinon, Dursban, DDT, Malathion, etc.

Pesticide 'Polo' and its health Impact:

- Manufactured by **Syngenta**, **Polo** contains **diafenthiuron**, banned in the **EU** and **Switzerland** due to health and environmental risks.
- Health impacts include **nausea**, **vision impairment**, **photo-sensitivity**, **loss of stamina**, and **even death** with severe exposure.

Status of pesticides in India:

- India ranks **2nd** in pesticide production and is the **5th largest exporter globally**. **Maharashtra**, especially **Vidarbha**, utilizes **50%** of India's pesticides, notably in **cotton farming**.
- Pesticides are a **leading cause of poisoning**; intentional or unintentional consumption causes two-thirds of poisoning cases in India.

Regulation of Pesticides:

- **Insecticides Act, 1968**: Governs import, manufacture, sale, transport, and use of insecticides and pesticides to prevent risks to humans and animals.
- **Pesticide Registration**: Handled by the **Directorate of Plant Protection, Quarantine & Storage (DPPQS)**, an office under the **Ministry of Agriculture and Farmers Welfare**.
- **DPPQS**: Advises governments on plant protection, and oversees pest management, plant quarantine, pesticide regulation, locust control, and training.

Issues in pesticide regulation:

- **The Pesticides Management Bill** seeks to replace the **Insecticides Act of 1968**, aiming for effective regulation, minimizing risks, and promoting bio-based and traditional pesticides.
- Despite **international bans**, **India permits at least 116 hazardous pesticides**, posing health risks.
- Attempts to ban certain pesticides resulted in reversals, with limited bans enforced in 2023 on hazardous pesticides.

Central Insecticides Board & Registration Committee (CIBRC):

- Established under the **Ministry of Agriculture** to regulate insecticide usage, manufacturing, import, and sale.
- **Responsibilities include** advising on insecticide manufacturing, classification, residue tolerance, shelf-life, and registration.

Alternatives for Farmers:

- **Integrated Pest Management (IPM) techniques**: Cost-effective mechanical methods.

- **Bio-pesticides:** Environment-friendly alternatives.
- **Molecular target-specific low-toxicity pesticides:** Pricier but safer alternatives.
- **Pheromone traps and neem-based biopesticides:** Economical and effective methods.

Biomagnification:

- Defined as **the rise or increase in the contaminated substances caused by the intoxicating environment**. The contaminants might be **heavy metals** such as **mercury, arsenic, and pesticides** such as **polychlorinated biphenyls and DDT**.
- These substances are taken up by the organisms through the food they consume. When the organisms in the **higher food chain feed on the organisms in the lower food chain containing these toxins**, these **toxins accumulate in the higher organisms**.

Topic 6. A DIVE INTO SANITATION SOLUTIONS: PROCESSING, MANAGING AND TREATING USED WATER

Important for the subject: Environment

Urban Sewer Systems:

Sewers: Underground pipe networks in densely populated urban areas transporting waste to treatment facilities.

- **Sewage Treatment:** Conveys waste to sewage treatment plants (STPs) for purification and pollutant removal.

Sanitation System Types:

- **On-Site Sanitation Systems (OSS):** Used in **rural or spacious urban areas**, including **twin pits, septic tanks, bio-digester toilets, bio-tanks, and urine diversion dry toilets**.
- **The functionality of OSS:** Collection and storage structures that passively treat used water, disposing of liquid waste into the surrounding soil. Faecal sludge or septage, mainly solids from human excreta, accumulates within pits and tanks.

Twin Pits and Septic Tanks:

- **Twin Pits:** Two pits are used alternately; liquid waste soaks into the ground while solids degrade at the pit's bottom. Unused pit left for two years for safe, natural waste disposal.
- **Septic Tanks:** Separate solids and scum from liquid waste; require periodic removal of accumulated faecal sludge.

Other OSS Systems:

- Bio-digester Toilets, Bio-tanks, Urine Diversion Dry Toilets: Additional OSS types

serving as collection and storage structures for waste treatment.

Treatment Facilities (FSTPs & STPs):

- **Faecal Sludge Treatment Plants (FSTPs):** Use **mechanical or gravity-based methods** to treat faecal sludge; reuse treated solids and water for various purposes.
- **Sewage Treatment Plants (STPs):** Employ **physical, biological, and chemical processes** to purify used water before discharge or reuse.

STP Variations and Functions:

- **STPs** can be mechanised or non-mechanised, chosen based on a city's resources. **FSTPs are smaller**, often decentralised and colocated with waste management sites.
- **Purpose:** Removal of impurities from used water to prevent pollution and public health issues; historical shift from odour/aesthetics focus to public and environmental health.

Significance:

- Effective waste management is crucial to protect water bodies and groundwater from pollution, emphasizing the importance of these sanitation systems.
- These sanitation systems are essential in containing, treating, and managing used water to ensure public health safety and environmental protection from potential pollution.

Challenges:

- Universal access to safe sanitation remains challenging due to poorly designed systems and inadequate operational practices.

Topic 7. ENVIRONMENT ORGANISATIONS

Important for the subject: Environment

Friday for Future (FFF):

FFF is a **youth-led and -organised global climate strike movement** that started in **August 2018**, when **Greta Thunberg** began a school strike for climate.

Goals:

- The goal of the movement is to **put moral pressure on policymakers**, to make them listen to the scientists, and then to take forceful action to limit global warming.
- This movement is **independent of commercial interests and political parties** and knows no borders.

Extinction Rebellion (XR):

- It is a **UK-founded global environmental movement**, with the stated **aim** of

using **nonviolent civil disobedience** to compel government action to avoid **tipping points** in the climate system, biodiversity loss, and the risk of social and ecological collapse.

- It was established in **Stroud (the U.K.)** in **May 2018** by **Gail Bradbrook, [Simon Bramwell, and Roger Hallam]**, along with eight other co-founders from the campaign group **Rising Up!**

Just Stop Oil:

- It is a **British environmental activist group**.
- Using **civil resistance, direct action, vandalism and traffic obstruction**, the group aims for the British government to **commit to ending new fossil fuel licensing and production**.
- **Founded in February 2022** and began protesting at **English oil terminals** in April 2022. The group has received particular attention, positive and negative, for its methods of activism.

Last Generation:

- The Last Generation is a **group of climate change activists** mostly active in **Germany, Italy, and Austria**.
- It describes itself as an **“alliance”** and was **formed in 2021** from participants in the **Hungerstreik der letzten Generation (“last generation hunger strike”)**.
- The term was chosen because they considered themselves to be the **last generation before tipping points in the earth’s climate system would be reached**.
- **Goal:** To promote a generational collective initiative to protect our earth, and to build a more substantial future, through popularizing reaching out to policy makers, maintaining an open forum to discuss issues pertinent to marginalized communities, and by enforcing these ideals through motivating students to delegitimize the stereotype that they are too young to make a tangible change to our society.
- They have **staged direct non-violent actions** including numerous road blockades and using paint to vandalise yachts, notorious paintings, buildings, restaurants and private jets.

Topic 8. A DECADE-LONG INITIATIVE IN MADHYA PRADESH TO RECLAIM LAND OVERRUN BY LANTANA HELPS RESIDENTS RESTART AGRICULTURE AND RESTORE NATIVE BIODIVERSITY

Important for the subject: Environment

Lantana is one of the **world’s ten worst invasive species** and a species of high concern for

India. Lantana is **not native to India**.

- It is native to tropical regions of the Americas and Africa but exist as an introduced species in numerous areas, especially in the Australian-Pacific region, South and North-eastern part of India.
- It was introduced in the country as an **ornamental plant by the British in the 1800s**, and has since spread over 574,186 sq km, covering 50 per cent of the country's "natural areas", according to an October 2023 study in the **Journal of Applied Ecology**.
- A 2020 estimate by researchers, published in the journal Global Ecology and Conservation, shows that the plant occupies 40 per cent of forests (over 154,800 sq km), including tiger reserves.
- A 2019 review paper published in Botanical Review states that lantana has also invaded most pasture lands (132,000 sq km) in the country.
- Eradicating lantana is difficult because of its rapid spread, intensity of infestation, allelopathy [chemicals released to discourage growth of native plants], opportunistic growth behaviour, reproductivity biology traits, and tenacious resistance to cutting and burning.
- It competes with native plants for space and resources and also alters the nutrient cycle in the soil.
- This invasion has resulted in the scarcity of native forage plants for wild herbivores. If eaten, the leaves can induce allergies on the muzzles of animals.
- In some cases, extensive feeding on lantana has led to diarrhoea, liver failure and even the animal's death.

Topic 9. GROW LOCAL, EAT LOCAL: BENGAL FARMERS HOLD A CELEBRATION OF INDIGENOUS SEEDS

Important for the subject: Environment

Indigenous seed festival held in Contai, West Bengal, organized by Action Aid, Kajla Janakalyan Samiti, and Purba Medinipur Kisan Swaraj Samity.

- Hundreds of farmers from various districts participated, showcasing **native varieties of paddy, pulses, and vegetables**.
- **Purpose:** Pledge to conserve diverse native seeds, exchange traditional knowledge, and promote sustainable farming practices.
- The festival is a part of **Action Aid's climate justice campaign**, facilitating discourse between **farmers on climate change, organic farming, and indigenous seed access**.
- **Action Aid's focus on climate resilience and sustainable farming across 22 Indian**

states. The NGOs aim to establish grassroots-level seed banks across West Bengal.

- **Radha Tilak**, an **aromatic rice variety**, highlights seeds' potential for safe food, biodiversity preservation, and local economic stimulation.

Recent Government Initiatives Related to Sustainable Agriculture:

- Mission Organic Value Chain Development for North Eastern Region (MOVCDNER)

National Mission on Sustainable Agriculture

1. Paramparagat Krishi Vikas Yojana (PKVY)
2. Sub-mission on AgroForestry (SMAF)
3. Rashtriya Krishi Vikas Yojana

Topic 10. INTERLINKING OF RIVERS COULD FLOOD INDIA'S FRESHWATER WITH INVASIVE FISH

Important for the subject: Environment

New research shows that **India's ambitious Interlinking of Rivers (ILR) programme** can **spread invasive, alien fish** to water bodies that are **home to endangered fish species**, posing **ecological, economic, and livelihood threats**.

- About a **third (31%)** of the total area in India provides **suitable habitat for invasive alien fish**. The **major river basins** of **Pennar, Kaveri, Godavari, Krishna** and **Mahanadi** that spread across central and southern India were found to be highly vulnerable to invasion.
- The **river interlinking** in India would **establish connectivity routes and help expand the range of potentially invasive species**, especially in areas rich in threatened endemic species, such as the **northeast India** the **Western Ghats** and the **Sundarbans**.

Threat to biodiversity:

- **Invasive species** affect **biodiversity** and ecosystems by **increasing competition for food and taking up space** which, coupled with **changing biotic environments, habitat degradation and pollution**, often **negatively affects native species populations**.
- In the case of **invasive fish**, which may display **aggressive territorial behaviour**, it can cause a **decline in the number of native fish**, which in turn, affects **fishing livelihoods**.
- Globally, **habitat destruction, increasing aquaculture** and the **introduction of ornamental species** are **altering freshwater ecosystems**.

Some invasive fishes are:

- **Gambusia**, native to the **USA** and **Poecilia** from **South America**, are widely used in **mosquito control**. **Pterygoplichthys** are popular **ornamental**

fish. **Tilapia** and **Cyprinus carpio** are invasive species in the **Ganga River system**.

- **Hypophthalmichthys nobilis**, native to **China**, has a suitable habitat in the **Narmada, Mahi, Mahanadi, Kaladan, Irrawaddy, Godavari, Ganges, and Damodar** river basins.

River Interlinking Project:

- The **Indian Rivers Inter-link** is a proposed **large-scale civil engineering project** that aims to **effectively manage water resources in India** by **linking Indian rivers** by a network of reservoirs and canals to enhance irrigation and groundwater recharge, reduce persistent floods in some parts and water shortages in other parts of India.
- **India** accounts for **18%** of the **world population** and about **4%** of the **world's water resources**. One of the solutions to solve the country's water woes is to link rivers and lakes.
- The **Inter-link project** has been **split into three parts**: a **northern Himalayan rivers inter-link component**, a **southern Peninsular component** and starting 2005, an **intrastate rivers linking component**.
- The project is being managed by **India's National Water Development Agency (NWDA), Ministry of Jal Shakti**.
- **NWDA** has studied and prepared reports on **14 inter-link projects for Himalayan component, 16 inter-link projects for Peninsular component and 37 intrastate river linking projects**.

Topic 11. THE SAHARA DESERT USED TO BE A GREEN SAVANNAH AND NEW RESEARCH EXPLAINS WHY

Important for the subject: Environment

Algeria's TassiliN'Ajjer plateau is **Africa's largest national park**. Over **15,000 etchings and paintings** are exhibited there, some as much as **11,000 years old** according to scientific dating techniques, representing a **unique ethnological and climatological record of the region**.

The Green Sahara or North African Humid Period:

- It was a period approximately **6,000-11,000 years ago**. There is widespread **climatological evidence** that during this period the **Sahara supported wooded savannah ecosystems and numerous rivers and lakes** in what are now **Libya, Niger, Chad and Mali**.
- Using **marine and lake sediments**, scientists have identified over 230 of these greenings occurring about every **21,000 years** over the past eight million years.
- These greening events provided **vegetated corridors** which **influenced species'**

distribution and evolution, including the out-of-Africa migrations of ancient humans.

- These dramatic greenings would have required a **large-scale reorganisation of the atmospheric system to bring rain to this hyper-arid region.**

Why has North Africa greened approximately every 21,000 years over the past eight million years?

- It was caused by **changes in the Earth's orbital precession** – the **slight wobbling of the planet while rotating**. This moves the **Northern Hemisphere** closer to the sun during the summer months.
- This caused **warmer summers in the Northern Hemisphere**, and **warmer air is able to hold more moisture**. This intensified the strength of the **West African Monsoon system** and shifted the **African rain belt** northwards.
- This increased **Saharan rainfall**, resulting in the **spread of savannah and wooded grassland** across the desert from the tropics to the Mediterranean, providing a vast habitat for plants and animals.

Earth's changing orbit:

- The **Earth's orbit around the sun isn't constant** due to **gravitational effects** from celestial bodies like the **moon and planets**, causing **Milankovitch cycles**.
- These cycles impact the **solar energy** received by the Earth, the **eccentricity** of the Earth's orbit, the **tilt of the Earth's axis** (obliquity), and **ice ages** on Earth.
- The **third Milankovitch cycle, or precession**, involves **Earth's wobble** on its axis across **21,000 years**. This cycle significantly correlates with **periods of increased humidity**.
- **Precession** affects seasonal differences, intensifying them in one hemisphere while reducing them in the other.
- This change triggers **more rainfall in North Africa** during **warmer Northern Hemisphere summers**, initiating **humid phases** and promoting vegetation growth across the region.

Eccentricity and the ice sheets:

- The **eccentricity cycle** determines how circular Earth's orbit is around the sun. The **eccentricity** indirectly influences the **magnitude of the humid periods** via its influence on the **ice sheets**.

Significance of the Sahara region:

- The Sahara acts as a gate. It controls the **dispersal of species** between north and sub-Saharan Africa, and in and out of the continent.

- The gate was open when the **Sahara was green** and **closed when deserts prevailed**.

Significance of the study findings:

- It shows the sensitivity of this gate to Earth's orbit around the sun. **High-latitude ice sheets** may have **restricted the dispersal of species** during the glacial periods of the last 800,000 years.

Topic 12. SIGNIFICANT CLIMATE MILESTONES OF 2023

Important for the subject: Environment

Hottest Year in History:

2023 is likely to be **declared the hottest year**, exceeding the previous record of **2016** by **0.1°C** and **surpassing pre-industrial levels** by **1.43°C**.

- **Copernicus Climate Change Service (C3S)** data highlights the sustained high temperatures throughout the year.

Unprecedented Sea Surface Temperatures:

- **Marine heat waves**, occurring when **ocean temperatures** exceed **90%** of past observations, were widespread in **2023**, affecting **48%** of **global oceans**.
- **Global sea surface temperatures** remained **exceptionally high**.

Antarctic Sea Ice Extent at Record Low:

- **Antarctic sea ice** experienced **historically low growth** in **2023**, with an annual maximum extent of **16.96 million sq. km** in September, the **lowest since 1979**.

Record Carbon Dioxide Levels:

- **Global carbon dioxide emissions** hit a **new high in 2023**, albeit with a slight plateau due to **decreased deforestation**, **increasing by 1.1%** from the previous year.

Creation of Loss and Damage Fund:

- **COP28** initiated the **first loss and damage fund** for climate change impacts, established at the start of the conference in December.
- The fund, housed at the **World Bank** but **managed independently**, received **\$792 million in pledges** from governments, falling short of the needed billions.

Climate Impact of Food Systems Addressed:

- At **COP28**, **134 countries** pledged to tackle the **climate impact of the food industry**, representing over **70%** of **global food consumption** and **76%** of **related emissions**.
- However, critics noted the absence of specific quantitative targets in this historic

declaration. Countries also signed the **Declaration on Climate and Health**. (India didn't sign it).

- The **COP28 Declaration on Climate and Health** is a **non-binding, non-negotiated call to action** and **collective commitment** that reflects the concerns and common position of countries on the importance of health within climate discourse and in the COP process.

Topic 13. BIRDERS' NETWORK FINDS RARE PELAGIC BIRDS ON KARNATAKA'S COAST

Important for the subject: Environment

Some 180 birdwatchers from across India were able to document rare '**pelagic**' birds throughout 2023 just off the **Karnataka coast**.

About Pelagic Birds:

- These are seabirds that **live on open seas and oceans** rather than inland or around more restricted waters such as **lakes and rivers**.
- They can be found thousands of miles offshore but can get blown onto land during high winds and storms. The only other time they come inland is to breed.
- The most familiar types of pelagic birds include **albatrosses, frigatebirds, fulmars, petrels, shearwaters, and tropicbirds**.
- **Example:** Sooty Shearwater, Brown Skua, Brown Booby, Streaked Shearwater and Masked Booby.

Features:

- They **feed on planktonic crustaceans and squid and hunt fish** far from the land. Generally, they have **dense, waterproof feathers** and **layers of fat** to keep them warm.
- They have **exceptionally long and thin wings** that allow them to fly effortlessly for long periods without rest.
- Many **pelagic birds** have **special salt glands**. This allows them to **drink seawater** and **discard extra salt** accidentally ingested by their oceanic prey.
- Some have **webbed or partially webbed feet** for **swimming, plucking fish** from the shallows, or executing precise, plunging dives.
- In general, **seabirds live longer than other wild birds**; most have an average lifespan of **50 years**. Almost **all seabirds live in colonies, migrate annually, and mate for life**.

Topic 14. FREE-RANGING CATS MAY BE CATASTROPHIC FOR WILD SPECIES

Important for the subject: Environment

Free-ranging domestic cats around the world are found to eat **more than 2,000 other animal species** such as **birds, mammals, insects, and reptiles** — including 350 species of conservation concern.

- The researchers found records of 2,083 distinct species consumed, including 981 birds, 463 reptiles, 431 mammals, 119 insects, 57 amphibian species, as well as 33 species from across other groups of animals. At least 347 of these species are of conservation concern.

Free Ranging Cat (Felis catus):

- Commonly referred to as the **domestic cat** or **house cat**, is the **only domesticated species** in the **family Felidae**.
- Recent advances in archaeology and genetics have shown that the **domestication of the cat** occurred in the Near East around **7500 BC**.
- It is commonly kept as a house pet and farm cat, but also ranges freely as a feral cat avoiding human contact. It can **kill vermin**.
- It has a strong flexible body, quick reflexes, and sharp teeth, and its **night vision** and **sense of smell** are well developed. It also secretes and perceives **pheromones**.

Topic 15. WHERE FOSSILS MEET FAITH IN A MADHYA PRADESH DISTRICT

Important for the subject: Environment

In Madhya Pradesh's Dhar district, scientists recently confirmed that a **revered Bhil deity, Kakad Bhairav**, worshipped as a **sun-baked stone**, is actually a **66-million-year-old fossilized egg of a titanosaur, a herbivorous dinosaur**. The discovery challenges **long-standing local beliefs**.

- The region has been **rich in prehistoric discoveries** since the **1980s**, with fossils of **sauropods, dinosaur eggs, and extinct marine creatures** indicating an ancient past.
- Eminent palaeontologist **Ashok Sahni** describes this area as hosting the **largest dinosaur hatchery on Earth**, spreading across **Gujarat, Madhya Pradesh, Maharashtra, and Andhra Pradesh**.
- Over **256 fossilised dinosaur eggs**, including recent discoveries of **20 nests**, have been found in **Madhya Pradesh's Bagh region**.
- There's hope that this latest **confirmation** could aid in obtaining **UNESCO's Global Geopark status** for the **Bagh site**, further enhancing its scientific significance.

- **Vishal Verma**, a physics teacher, has played a pivotal role in safeguarding over **100 fossilized dinosaur eggs** and various other ancient treasures in the region.
- The scientists and local community are acknowledging the vital role of the **Bhil community** in **protecting this significant heritage site**.

Historical aspect:

- Research indicates that **dinosaurs existed in India** from the **Late Triassic** (200 Mn years) to the **Cretaceous Period** (65 Mn years ago).
- Historical discoveries of dinosaur remains in **India** date back to the **19th century**, with the country witnessing significant **fossil excavations**, including the **identification of a new species of carnivorous dinosaur** named **Rajasaurus narmadensis**.
- **Captain William Sleeman**, posted in the **Narmada Valley**, discovered the **skeletal remains** in **Jabalpur** cantonment's **Bara Simla Hill** in **1828**. As a tribute, a town in **MP**, 40 km away from **Bagh**, was rechristened as **Sleemanabad**.
- The **region's fossilized treasures**, including **ammonites**, **shark teeth**, and **titanosaurs' eggs**, provide **crucial insights into ancient marine life** and **geological evolution**, shedding light on the **cataclysmic forces** that shaped the **planet millions of years ago**.

Topic 16. POWERING PAST COAL ALLIANCE (PPCA)

Important for the subject: Environment

It is a **coalition of national and subnational governments, businesses and organisations** working to advance the **transition from unabated coal power generation to clean energy**.

- By launching the **PPCA** at **COP23** in **2017**, the **UK** and **Canada** brought the leaders together, turning their **individual commitments** into a **diplomatic offensive** to advance the **transition from coal power** across the world.
- 27 national, provincial, state, and city governments joined initially, endorsing the **PPCA Declaration**. The Alliance was hailed as a '**political watershed**' and a new '**anti-fossil fuel norm**'.
- Through the **PPCA Finance Taskforce** launched in **June 2020**, underpinned by the **PPCA Finance Principles**, **finance and government members and partners** of the **PPCA** are working together to **cease new investments in coal-fired power**, **phase out existing coal capacity** and **boost investments in clean energy**.

Topic 17. FOSSIL FUEL NON-PROLIFERATION TREATY

Important for the subject: Environment

A growing bloc of nation-states is joining forces at **COP28** to begin to seek a negotiating mandate for a **Fossil Fuel Non-Proliferation Treaty**.

The treaty is endorsed by:

- **The 12 endorsing states are:** Vanuatu, Tuvalu, Tonga, Fiji, the Solomon Islands, Niue, Antigua and Barbuda, Timor-Leste, Palau, Colombia, Samoa, and Nauru. They have been supported by the **World Health Organization**, the **European Parliament** and thousands of others.

Aim of the treaty:

- This **treaty** aims to complement the **Paris Agreement** by **halting fossil fuel expansion**, ensuring an **equitable phase-out**, and **fostering a just energy transition globally**.

Pillars of the treaty:

Non-Proliferation

- Stop building out the problem by ending the expansion of coal, oil and gas production

A Fair Phase-Out

- An equitable plan for the wind down of existing fossil fuel production, where nations with the capacity and historical responsibility for emissions transition fastest, providing support to others around the world

Just Transition

- Fast-track the adoption of clean energy and economic diversification away from fossil fuels so that no worker, community or country is left behind

Need for this treaty:

- The urgency to address **fossil fuel impacts on climate change** has led to calls for a binding plan to halt **new coal, oil, and gas projects**. **COP28** sees a **coalition** forming to **propose a Fossil Fuel Treaty**.

Topic 18. IMF WARNING ON INDIA'S DEBT

Important for the subject: Economy

The IMF warns that **India's general government debt may exceed 100% of GDP by 2028** in the medium term. Long-term risks are identified due to the need for **significant investment in climate resilience**. **New concessional financing, increased private sector investment, and carbon pricing** are recommended.

Sovereign Debt Risks Disagreement:

- The Indian government disagrees with the IMF, stating sovereign debt risks are limited.
- **Sovereign debt is mainly denominated in domestic currency, reducing vulnerability.** India disputes the IMF's baseline, **considering the risk of debt exceeding 100% of GDP extreme.**
- Points out the limited risks from sovereign debt, **highlighting historical stability.**

Exchange Rate Reclassification:

- The IMF reclassifies **India's exchange rate regime to a "stabilized arrangement."**
- India disputes this, emphasizing the importance of exchange rate flexibility.

Optimistic Outlook and Structural Reforms:

- IMF provides a fairly optimistic outlook for India's economy.
- **Potential for faster growth than the IMF's forecast of 6.3% with key structural reforms.**

Medium-Term Fiscal Consolidation Urged:

- IMF calls for **"ambitious" fiscal consolidation** over the medium term to control public debt. Identifies potential challenges, including **global growth slowdown, supply disruptions, weather shocks, and inflationary pressures.**
- Despite the multitude of shocks, the global economy has faced in the past two decades, **India's public debt-to-GDP ratio at the general government level has barely increased from 81% in 2005-06 to 84% in 2021-22, and back to 81% in 2022-23.**

Challenges in Credit Ratings:

- India faces challenges in **enhancing credit ratings due to elevated debt levels and servicing costs.**
- Agencies attribute India's lower rating to weak fiscal performance, burdensome debt stock, and low GDP per capita.

Per Capita Income and Uneven Distribution:

- India's per capita income doubled since 2014-15, reaching Rs. 1, 72, 000. **Uneven income distribution, exacerbated by the Covid-19 pandemic, remains a challenge.**

Expert Perspectives on Sovereign Rating:

- Experts suggest considering the **improving quality of government expenditure** in sovereign ratings.

Debt-to-GDP ratio

- Debt-to-GDP ratio is a financial metric that compares a country's total debt to its gross domestic product (GDP).
- It is expressed as a percentage and provides insight into the **ability of a country to manage its debt relative to the size of its economy**.
- The formula for calculating the Debt-to-GDP ratio is as follows:
- Debt-to-GDP Ratio = (Total Debt/Gross Domestic Product) × 100

In this formula:

- **Total Debt** refers to the **cumulative debt of a country**, including both internal and external debt.
- **Gross Domestic Product (GDP)** is the **total value of all goods and services produced** within the country's borders within a specific time frame.
- A higher Debt-to-GDP ratio indicates that **a country has a higher level of debt relative to its economic output**.
- While a certain level of debt is normal for most countries, an excessively high ratio can signal potential risks, such as **challenges in servicing the debt or economic vulnerability**. Central banks, policymakers, and economists closely monitor the Debt-to-GDP ratio as part of assessing a country's fiscal health and economic stability.

Topic 19. INDIA'S JOBS CRISIS, THE MACROECONOMIC REASONS

Important for the subject: Economy

The employment challenge can no longer be met only through more rapid GDP growth; a separate policy focus is needed on employment.

Two types of employment

- The first is **wage employment** which is a result of labour demanded by employers in their pursuit of profits.
- The second is **self-employment** where labour supply and labour demand are identical, i.e., the worker employs herself. A further useful distinction can also be made between wage labour and jobs. The first includes all forms of labour done for an employer including daily wage work at one extreme and highly paid corporate jobs at the other.

- But jobs generally refer to relatively better paid regular wage or salaried employment. In other words, **all jobs are wage labour, but all wage labour cannot be called jobs.**
- When we speak of a jobs problem, we are speaking of inadequate labour demand particularly for regular wage work.

Characteristics of Indian economy

- The Indian economy has historically been characterised by the **presence of both open unemployment (out of work job-seekers) as well as high levels of informal employment** consisting of the self-employed as well as casual wage workers.
- The last is also called “**disguised unemployment**” because, being similar to open unemployment, it also indicates a lack of adequate employment opportunities in the formal sector.
- This lack of opportunities is reflected by a more or less stagnant employment growth rate of salaried workers in the non-agricultural sector in the last four decades.

Symptoms of low labour demand

- The labour demand in the formal non-agricultural sector is determined by two distinct factors.
- **First, since firms in the formal sector hire workers to produce output for profit, labour demand depends on the amount of output that firms are able to sell.** Under any given level of technological development, labour demand in the formal sector rises when demand for output rises.
- **Second, labour demand depends on the state of technology** that dictates the number of workers that firms need to hire to produce one unit of output. Introduction of labour-saving technologies enables firms to produce the same amount of output by hiring a lower number of workers

Employment growth rate

- **Employment growth rate is determined by the relative strength of two factors — the output growth rate and the labour productivity growth rate** (growth rate of output per worker). If labour productivity growth rate does not change, higher output growth rate increases employment growth rate.
- In other words, policies that promote higher economic growth would also achieve higher employment growth. On the other hand, if labour productivity growth rate rises, employment growth rate falls for a given output growth rate.
- In India, the employment growth rate of the formal and non-agricultural sector remained unresponsive despite a significant rise in the GDP growth rate and the value-added growth rate during the 2000s as compared to the decade of the 1980s and 1990s.
- The lack of responsiveness of employment growth rate to changes in output growth rate

reflects a phenomenon of jobless growth. It indicates a strong connection between labour productivity growth rate and output growth rate.

Jobless growth with Indian characteristics

- As an economy grows, it is generally seen that it also becomes more productive. That is, in the process of producing a greater amount of total output, firms become capable of producing more output per worker.
- This happens because of what economists call “**economies of scale**”. As firms produce more output, they find it easier to adopt labour-saving technologies. But the extent to which labour-saving technologies are introduced depends on the bargaining power of labour.

Two types of Jobless growth

- In the first case, the **responsiveness of labour productivity growth rate to output growth rate is weak**. The possibility of jobless growth in this case emerges exclusively on account of automation and the **introduction of labour-saving technology**.
- But employment growth rate in such regimes would necessarily increase if output growth rate happened to increase. Under weak responsiveness of labour productivity, the positive effect of GDP growth rate on employment would dominate over the adverse effect of labour-saving technologies.
- Here, the solution to the jobs crisis is just more rapid economic growth. In the second case, which happens to be the Indian one, the **responsiveness of labour productivity growth rate to output growth rate is high**.
- Here, the positive effect of output growth rate on employment fails to counteract the adverse effect of labour-saving technologies. Employment growth rate in such regimes cannot be increased simply by increasing GDP growth rate.

Kaldor-Verdoorn coefficient

- The **extent to which labour productivity growth rate responds to output growth rate is reflected by what is termed as the Kaldor-Verdoorn coefficient**.
- Recent working paper shows that **India’s non-agricultural sector is characterised by a higher than average Kaldor-Verdoorn coefficient, as compared to other developing countries**.
- It is this distinct form of jobless growth regime in India that makes India’s macroeconomic policy challenge qualitatively different from other countries.

Macroeconomic policy framework

- The central contribution of the **Keynesian revolution in macroeconomics was to highlight the role of aggregate demand as the binding constraint on employment**.

- **Fiscal policy was perceived to increase labour demand by stimulating output.** The developing countries that inherited a dual economy structure during their independence, confronted additional constraints on output.
- **The Mahalanobis strategy identified the availability of capital goods as the binding constraint on output and employment, putting forward the policy for heavy industrialisation.**
- The structuralist theories based on the experiences of developing countries highlighted the **possibility of agrarian constraint and the balance of payment constraints.** Both these constraints led to key policy debates in India, particularly during the decade of the 1970s and early 1990s.
- Nonetheless, what remained common to all these different frameworks was the presumption that increasing the output growth rate in the non-agricultural sector would be a sufficient condition for increasing the employment growth rate in the formal sector.
- But the evidence suggests that the employment challenge can no longer be met only through more rapid GDP growth. Rather, a separate policy focus is needed on employment in addition to the focus on GDP growth.

Topic 20. THE IMF'S SOVEREIGN DEBT RISK ASSESSMENT FOR INDIA HAS SPURRED A SHARP REACTION

Important for the subject: Economy

The Finance Ministry, last Friday, issued a statement titled '**Factual position vis-à-vis IMF's Article IV consultations with India**'.

- The International Monetary Fund (IMF), under its **Articles of Agreement**, holds bilateral discussions with members, usually every year.
- IMF staffers collect economic and financial information, and discuss policies with top officials, before preparing a report that is discussed by the **Fund's executive board**.

India's debt

- **The combined debt of central and State governments stood at 81% of GDP in 2022-23, from 88% in 2020-21.** Under favourable circumstances, the IMF reckons this could even go down to 70% by 2027-28.
- The shocks faced by India so far in this century were global, and affected the entire world economy, be it the 2008 financial crisis or the pandemic, the Ministry pointed out.
- Reacting to initial news flashes, it further clarified its statement was not a rebuttal to the IMF but "an effort to arrest misinterpretation or misuse" of its comments to imply that General Government debt would exceed 100% of GDP in the medium term.
- Semantics experts may argue whether the communiqué was confrontational or

clarificatory. **India's Director on the IMF Board had already placed on record reservations about its staff's conclusions on debt risks** and some other aspects of the economy.

Ministry's statement

- The Ministry statement, four days after the IMF released its latest India consultation details, noted that **"certain presumptions have been made taking into account possible scenarios that does not reflect factual position"**.
- In particular, the **Ministry was referring to an IMF view that adverse shocks could lift India's general government debt to, or beyond 100% of GDP in the medium-term (by 2027-28).**
- The Ministry asserted this was only a worst-case scenario and not a fait Accomplishment, and emphasised that other IMF country reports show much higher extreme 'worst-case' scenarios, for instance, at 160%, 140% and 200% of GDP, for the U.S., the U.K. and China, respectively.

Perceptions of India's fiscal position

- In the broader picture, **IMF staff's perceptions of India's fiscal position have actually improved over the past year.**
- **From arguing in 2022 that India's fiscal space is at risk, they now believe sovereign stress risks are moderate.** This is in no small part due to the ability of the **Centre, whose debt levels were about 57% of GDP last year**, to meet fiscal deficit targets in recent times.

About International Monetary Fund (IMF)

- The International Monetary Fund (IMF) **works to achieve sustainable growth and prosperity for all of its 190 member countries.** The IMF, also known as the Fund, was conceived at a UN conference in **Bretton Woods, New Hampshire, United States, in July 1944.**
- It does so by supporting economic policies that **promote financial stability and monetary cooperation**, which are essential to increase productivity, job creation, and economic well-being. The IMF is governed by and accountable to its member countries.

The IMF has three critical missions:

- furthering international monetary cooperation, encouraging the expansion of trade and economic growth, and discouraging policies that would harm prosperity.
- To fulfil these missions, IMF member **countries work collaboratively** with each other and with other international bodies.

Topic 21. STAGFLATION RISK ASSESSMENT BY RBI

Important for the subject: Economy

Stagflation Risk Reduction: Officials at the Reserve Bank of India (RBI) have revised down the **risk of stagflation, a combination of economic stagnation and high inflation**, from 3% in August to 1% based on recent data.

- **Methodology Used:** The assessment involved two approaches. The first considered phases of **low economic growth coinciding with high inflation**.
- The second employed “**Inflation at Risk**” (IaR) and “**Growth at Risk**” (GaR) frameworks, using quantile regression to gauge the likelihood of stagflation.
- **Determinants of Stagflation Risk:** According to the RBI, empirical findings indicate that **supply-side shocks, such as spikes in commodity prices, along with tighter financial conditions and a relatively higher depreciation of the domestic currency**, are major determinants of stagflation risk in India.
- **Historical Context:** Elevated risks of stagflation were observed during specific episodes, **including the Asian Crisis, the Global Financial Crisis, the taper tantrum, and the COVID-19 pandemic**.
- **Concerns Raised:** Stagflation is viewed as a destabilizing factor with the potential to disrupt the entire macroeconomic framework by creating an environment of uncertainty.
- The RBI considers it a major concern, given its mandate to maintain price stability while considering the objective of growth.
- **Global Stagflation Concerns:** **Higher commodity prices and the appreciation of the U.S. dollar post-pandemic have raised concerns about stagflation globally.**
- Delays in the monetary normalization process after the pandemic also contribute to worries about potential costly stagflation.
- **Weak Passthrough of Crude Oil Prices:** The weak pass through of crude oil prices to domestic petrol and diesel prices limits the predictive power for stagflation, according to the RBI.
- **Central Bank Focus:** The focus of central banks on maintaining price stability and ensuring the financial health of institutions has helped **anchor long-term inflation expectations to the inflation target, unlike the 1970s when expectations were weakly anchored and reached exorbitantly high levels**

Inflation in India

- **Inflation:** Inflation refers to the **general increase in prices and the fall in the**

purchasing power of money. It occurs when the demand for goods and services surpasses their supply, leading to an increase in their prices.

- High inflation can erode the value of savings and income, leading to reduced consumer spending and economic instability.

Types of inflation include:

- **Demand-pull inflation: Caused by increased consumer demand that outpaces supply.**
Cost-push inflation: Caused by an increase in production costs, such as wages or raw materials, leading to higher prices.
- **Deflation:** Deflation is the **opposite of inflation and refers to a sustained decrease in the general price level of goods and services.** It occurs when the supply of goods exceeds demand, leading to reduced prices.
- **Deflation can discourage spending, as consumers may delay purchases in anticipation of lower prices, which can further slow down economic growth and potentially lead to recession.**
- **Stagflation:** Stagflation is a situation characterized by a **combination of stagnant economic growth, high unemployment, and high inflation.**
- It presents a challenge for policymakers, as traditional measures to **stimulate economic growth, such as increasing the money supply, may exacerbate inflation.**
- **Hyperinflation:** Hyperinflation is an **extremely high and typically accelerating inflation.** It occurs when the price levels rise rapidly, eroding the value of the currency.
- This phenomenon often results from a collapse in the currency **and is detrimental to the economy, leading to a loss of confidence in the currency and undermining economic stability.**
- **Reflation:** Reflation is an **attempt to stimulate an economy that is experiencing deflation.** It involves the implementation of monetary or fiscal policies **to increase the money supply and boost aggregate demand, with the aim of reversing deflation and stabilizing prices.**
- **Disinflation** refers to a **slowdown in the rate of inflation.** While prices may still be rising, they are doing so at a slower pace compared to the previous period.
- **Disinflation does not imply a decrease in prices, as is the case with deflation, but**

rather a reduction in the rate of increase of the general price level in an economy.

- Disinflation can occur for various reasons, such as **increased productivity, reduced consumer demand, or a drop in the prices of commodities.**

Topic 22. ASEAN-INDIA FTA REVIEW

Important for the subject: Economy

Negotiations in February: India and the ten-member Association of South East Asian Nations (ASEAN) will commence negotiations in February to modernize their **15-year-old free trade agreement (FTA) officially known as the ASEAN India Trade in Goods Agreement (AITGA).**

- **Review Objectives:** The primary objective of the review is to address the **trade deficit for India and modernize the FTA, considering the significant changes** that have occurred since its signing. New elements, including **product-specific rules and trade remedies**, will be introduced to enhance efficiency.
- **First Round of Negotiations:** The initial round of negotiations is scheduled for February 18-19 in New Delhi, with subsequent negotiations following a quarterly schedule aiming to conclude by 2025.
- **Disproportionate Benefits:** India has long advocated for a review of the AITGA, as the current pact resulted in **disproportionate benefits for the ASEAN.**
- **India's trade deficit with the region has grown substantially from \$7.5 billion per annum to \$43.57 billion in FY23.**
- **Trade Deficit Concerns:** India aims to bring balance to the FTA, considering the **escalating trade deficit.**
- **Input from various sectors on tariff and non-tariff barriers faced in the ASEAN has been collected by the Commerce Department.**
- **Sectors Needing Attention:** Industries such as chemicals and alloys, plastics and rubber, minerals, leather, textiles, gems, and jewelry require support, as per industry analysis.
- **Rules of Origin Changes:** Modernizing the AITGA includes changes in the Rules of Origin (ROO) to favour India by increasing market access for certain items and preventing potential rerouting of goods by China through ASEAN countries.
- **Introduction of PSRs: Product-Specific Rules (PSRs) will be introduced, allowing India to relax rules for certain items to boost exports while blocking loopholes to prevent circumvention by China.**

- **Trade Remedies Chapter:** The modernized AITGA will feature a chapter on trade remedies to provide a safety net for domestic industries against unfair trade practices or unforeseen surges in imports.
- **Exclusions in Review:** No new areas, such as labor, environment, Small and Medium Enterprises (SMEs), or gender, will be added to the AITGA. The focus is on making the existing pact more efficient without complicating it with additional issues.
- **ASEAN's Trade Contribution:** The ten-member ASEAN, including Indonesia, Malaysia, the Philippines, Singapore, Thailand, Brunei, Vietnam, Laos, Myanmar, and Cambodia, accounted for 11.3% of India's global trade in 2022-23.

ASEAN-India Free Trade Area (AIFTA):

- **Formation:** A free trade area among the ten member states of the Association of Southeast Asian Nations (ASEAN) and India.
- **Commencement:** Came into force from **January 2010**.

Objective:

- Facilitate trade and economic cooperation between ASEAN member states and India.
- Promote the exchange of goods and services.

Elimination of Duties:

- The pact outlines timelines for the **gradual elimination of duties on a wide range of goods traded between ASEAN and India**.

Key Features:

- Aims to boost economic relations and enhance trade flows. Provides a framework for reducing or eliminating tariffs to create a more open and integrated market.
- Encourages collaboration in areas beyond trade, fostering economic ties in investment, technology, and other domains.
- **AIFTA contributes to the broader goal of regional economic integration among ASEAN countries and India.**
- **Intended to have a lasting impact on the economic landscape by creating a more conducive environment for businesses and trade.**

Topic 23. FISCAL SLIPPAGE DUE TO HIGHER SPENDING IN MGNREGA

Important for the subject: Economy

Fiscal Slippage Warning:

Despite robust tax collections, **India Ratings and Research** express concerns about a possible fiscal slippage in FY24.

Deficit Projection:

Forecasts the fiscal deficit for FY24 to be 6%, exceeding the budgetary target of 5.9%.

Factors Contributing to Slippage:

- **Higher-than-budgeted revenue expenditure.**
- **Expected first and likely second supplementary demand for grants.**
- **Lower-than-budgeted nominal GDP.**

Revenue Collections Impact:

- Anticipates fiscal slippage despite favorable tax and non-tax revenue collections.

Offsetting Measures:

- Higher revenue collections deemed insufficient to offset lower-than-budgeted divestment proceeds.

Fertilizer Subsidy Adjustment:

- Highlights an adjustment in the fertilizer subsidy, **increasing it from the budgeted ₹44,000 crore to ₹57,360 crore due to exhaustion of the budgeted amount by end October 2023.**

Mgnrega Expenditure Surge:

- Demand for employment **under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA).**
- Expenditure till December 19 exceeds the budgeted ₹60,000 crore, reaching ₹79,770 crore. **Additional allocation of ₹14,520 crore through the first supplementary demand for grants.**

Budgetary Challenges:

- Indicates challenges in **adhering to the budgetary targets due to increased spending on subsidies and employment guarantee schemes.**

Nominal GDP Impact:

- Cites lower-than-budgeted **nominal GDP as a contributing factor** to the fiscal slippage.

Concerns Despite Collection Growth:

- Despite handsome growth in tax collections, concerns arise from higher expenditures in key sectors.

Mgnrega

- **MGNREGA** stands for **Mahatma Gandhi National Rural Employment Guarantee Act**. It is a social security scheme that aims to provide livelihood and employment security in rural areas of India. Here are the key features and objectives of MGNREGA:
- **Employment Guarantee:** MGNREGA guarantees at least 100 days of wage employment in a financial year to every rural household whose adult members volunteer to do unskilled manual work.
- **Scope of Work:** The Act focuses on the execution of works related to water conservation, drought relief, and land development. Other permissible works include rural connectivity, flood control, and infrastructure development.
- **Right to Work:** MGNREGA emphasizes the legal right to work for rural households, ensuring that they have the option of seeking employment when needed.
- **Equal Wages:** The wages provided under the scheme are to be paid at a rate defined by the central government. There is a provision for equal wages for men and women.
- **Financial Inclusion:** Payment of wages is done through bank or post office accounts to ensure transparency and prevent leakages.
- **Gram Panchayat Role:** The Gram Panchayat is responsible for planning and executing the works under MGNREGA. Social audits are also conducted to ensure transparency and accountability.
- **Sustainable Development:** The Act aims to create durable assets and enhance the livelihood security of the rural population. This involves focusing on works that have a long-term impact on the development of rural areas.
- **Women Empowerment:** MGNREGA gives special emphasis on the participation of women in the workforce. At least one-third of the beneficiaries must be women.

Topic 24. FORCE MAJEURE REQUEST DUE TO FLOOD IMPACT ON CHENNAI AND THOOTHUKUDI PORTS

Important for the subject: Economy

Unprecedented Rains and Floods:

Chennai and Thoothukudi ports faced heavy losses and disruptions in maritime trade due to unprecedented rains in Tamil Nadu.

Force Majeure Appeal:

- Trade members involved in port operations have urged the **Chennai Port Authority and VOC Chidambaranar Port Authority** to declare Force Majeure at Chennai and

Thoothukudi ports, respectively.

Federation of Association of Stevedores Appeal:

- The **Federation of Association of Stevedores** has requested the VOC Port Authority to consider December 11, 12, and 13 as non-working days due to the impact of heavy rains.

Force Majeure Situation:

- The association emphasized that the **heavy rain and its consequences have created a Force Majeure situation, preventing stevedores from working and causing delays and penalties.**

Challenges Faced:

- **Reduction in migrant labor essential for stevedores.**
- **Delays in deliveries and receipts affecting ship turnaround.**
- **Industries shut down, leading to challenges in receiving or delivering goods to/from the port.**

Tuticorin Stevedores Association's Perspective:

- Unprecedented rainfall starting on December 16 and subsequent floods.
- **Vessel operations suspended from December 17.**

Industries shut down, hindering goods transportation.

- Request to consider the **situation as an Act of God and declare Force Majeure** until normalcy is restored.

Demurrages and Storage Issues:

- Accumulation of demurrages due to delayed pick-up and delivery.
- Inability to fulfill contracts and pay demurrage and storage costs.

Process for Force Majeure Declaration:

- While the **port authority itself cannot declare Force Majeure, it can recommend it to the Ministry. The Ministry, upon recommendation, will issue a Gazette Notification.**

About Force Majeure

- Force Majeure is a legal term that refers to **unforeseeable circumstances or events beyond the control of parties involved in a contract that may excuse non-compliance with the contractual obligations. These events are often considered “acts of God” or “acts of nature.”**
- Force Majeure clauses are **typically included in contracts to address situations where performance becomes impossible or impractical due to unexpected and**

uncontrollable events.

Key points about Force Majeure:

- **Unforeseeable Events:** Force Majeure events are those that could not have been anticipated or controlled by the parties when entering into the contract.

These events are often outside the reasonable control of the affected party.

- **Excusing Performance:** When a Force Majeure event occurs, the affected party may be excused from performing its contractual obligations, either temporarily or, in some cases, permanently.
- **Contractual Provision:** Force Majeure is usually addressed in a specific clause within a contract.
- **This clause outlines the types of events that qualify as Force Majeure, the obligations of the parties during such events, and the potential remedies available.**
- **Examples of Force Majeure Events:** Common examples of Force Majeure events include natural disasters (such as earthquakes, floods, hurricanes), wars, strikes, acts of terrorism, and government actions that impact contractual performance.

Topic 25. GOVERNMENT ISSUES PMLA NOTICE TO OFFSHORE CRYPTO FIRMS

Important for the subject: Economy

Show Cause Notices:

The Financial Intelligence Unit India (FIU-IND) issues **show cause notices to nine offshore cryptocurrency and virtual digital assets service providers (VDA SPs).**

Non-Compliance with PMLA:

- Reason: VDA SPs **found non-compliant with the Prevention of Money Laundering Act (PMLA).**

Compliance Action:

- The Finance Ministry terms the notices as “compliance action.”

Request to Block Web Addresses:

- **FIU-IND requests the Union Information Technology ministry to block the web addresses (URLs) of non-compliant entities.**

Role of FIU-IND:

- FIU-IND is the **national agency responsible for receiving, processing, analyzing, and disseminating information related to suspect financial transactions.**

PMLA Requirements for VDA SPs:

- Registration Requirement: VDA SPs engaged in activities like **exchange between virtual digital assets and fiat currencies, transfer of virtual digital assets, and safekeeping or administration of virtual digital assets must register with FIU-IND.**
- Activity-Based Requirements: **Requirements are “activity-based” and not contingent on physical presence in India.**

AML-CFT Framework:

- VDA SPs were brought **under the ambit of the Anti-Money Laundering (AML) and Counter Financing of Terrorism (CFT) framework under the PMLA in March 2023.**

Regulatory Obligations:

- Reporting entities **must maintain KYC details, records of documents, and file statements of financial transactions with the tax department.**

FIU-IND (Financial Intelligence Unit India):

- FIU-IND is the **national agency responsible for receiving, processing, analyzing, and disseminating information related to suspect financial transactions.**
- It operates under the **Finance Ministry and plays a crucial role in the Anti-Money Laundering (AML) and Counter Financing of Terrorism (CFT) framework.**
- FIU-IND monitors financial transactions to **identify and combat money laundering and terrorist financing activities.**

PMLA (Prevention of Money Laundering Act):

- PMLA is an Act passed by Parliament of India **enacted to prevent money laundering and related offenses.**
- It provides a **legal framework to combat money laundering and applies to financial institutions and intermediaries to ensure they follow measures for customer identification, record-keeping, and reporting of transactions.**
- The Act also designates certain authorities, such as FIU-IND, to oversee and enforce its provisions.

AML-CFT (Anti-Money Laundering and Counter Financing of Terrorism):

- AML-CFT refers to a **set of regulations and practices designed to prevent and combat money laundering and the financing of terrorism.**

- It involves implementing measures to detect and deter illicit financial activities, ensuring compliance with regulatory requirements, and enhancing transparency in financial transactions.
- Financial institutions, including virtual digital assets service providers (VDA SPs), are Important for the subject to AML-CFT regulations to prevent their services from being misused for illegal activities.

Topic 26. DOMESTIC SYSTEMICALLY IMPORTANT BANKS (D-SIBS)

Important for the subject: Economy

The Reserve Bank of India (RBI) has **designated State Bank of India (SBI), HDFC Bank, and ICICI Bank as Domestic Systemically Important Banks (D-SIBs)** and has placed them in specific buckets based on their Systemic Importance Scores (SISs).

ICICI Bank:

- ICICI Bank continues to be in the same bucketing structure as the previous year.

State Bank of India (SBI):

- SBI has moved from bucket 3 to bucket 4.

HDFC Bank:

- HDFC Bank has shifted from bucket 1 to bucket 2.

Effective Date of Higher D-SIB Buffer Requirements:

- For SBI and HDFC Bank, the higher D-SIB buffer requirements resulting from the bucket increase will be effective from April 1, 2025.
- The **additional Common Equity Tier 1 (CET1) requirement will be in addition to the capital conservation buffer.**

D-SIB Framework:

- The D-SIB framework **requires the RBI to disclose the names of banks designated as D-SIBs and place them in appropriate buckets based on their SISs.**
- Based on the bucket in which a D-SIB is placed, **an additional common equity requirement is applied.**

Foreign Banks with Branch Presence in India:

- In the case of a foreign bank with a branch presence in India that is a **Global Systemically Important Bank (G-SIB)**, it must maintain an additional CET1 capital surcharge in India, proportionate to its Risk Weighted Assets (RWAs) in India.

Historical Designation:

- The RBI had previously **designated SBI and ICICI Bank as D-SIBs in 2015 and 2016**. Based on data collected as of March 31, 2017, **HDFC Bank was also classified as a D-SIB**.
- The current update is based on data collected as of March 31, 2023, and **considers the increased systemic importance of HDFC Bank post the merger of erstwhile HDFC Ltd into HDFC Bank on July 1, 2023**.

Domestic Systemically Important Banks (D-SIBs) in India:

- The Reserve Bank of India (RBI) has identified State Bank of India (SBI), ICICI Bank, and HDFC Bank as Domestic Systemically Important Banks (D-SIBs).
- This designation **reflects the significance of these banks in the Indian economy, with considerations for their size, complexity, lack of substitutability, and interconnectedness**.

What are D-SIBs?

- **D-SIBs are banks that are considered “too big to fail,”** meaning their failure could have severe implications for the overall economy.
- The concept of D-SIBs was **introduced globally in the aftermath of the 2008 financial crisis to address the risks posed by large and interconnected banks**.

Determination of D-SIBs:

- **Factors Considered:** The RBI determines D-SIBs based on factors such as size, complexity, lack of substitutability, and interconnectedness with the financial system.
- **Classification into Buckets:** D-SIBs are classified into five buckets based on their importance to the national economy.
- **Asset Threshold:** To be designated as a D-SIB, **a bank must have assets exceeding 2 percent of the national GDP**.
- **Regulatory Requirements:** D-SIBs are Important for the subject to **higher regulatory requirements**. They need to maintain a higher share of risk-weighted assets as tier-I equity.

Regulatory Requirements for D-SIBs:

- **Additional Capital:** D-SIBs are required to **maintain Additional Common Equity Tier 1 (CET1) capital based on their risk-weighted assets**.

- **Risk Mitigation:** These requirements aim to mitigate the risks associated with the failure of a D-SIB and ensure their ability to absorb losses.

Significance:

- **Economic Importance:** D-SIBs play a crucial role in the economy, and their failure could lead to significant disruption in essential banking services and overall economic activities.
- **Government Support:** The “too big to fail” designation implies that, **in times of distress, the government is expected to provide support to prevent the failure of these banks.**
- **Advantages and Policy Measures:** D-SIBs may enjoy certain advantages in funding due to the perception of government support.
- Additionally, they are Important for the subject to specific policy measures addressing systemic risks and moral hazard issues.

CET1 and Risk-Weighted Assets (RWA):

- CET1 is high-quality regulatory capital absorbing losses immediately.
- RWA link minimum capital requirements to the risk profile of a bank’s lending activities.

Topic 27. PROPOSAL TO VERIFY THE RUMOURS IN THE STOCK MARKET – SEBI

Important for the subject: Economy

The Industry Standards Forum (ISF), a body established by the Securities and Exchange Board of India (SEBI) under the aegis of stock exchanges, has proposed a change in the criteria for rumour verification for listed firms.

- The suggestion is to **make the requirement for rumour verification applicable whenever there is a material “price movement” of the entities’ securities**, rather than a material “event.”

Key points of the proposal:

- **Material Price Movement:** Rumour verification would be **triggered by a material price movement in the securities of listed entities.**
- **Percentage Variation:** To determine material price movement, **a lower percentage variation may be considered for securities falling under a high price range, and a higher percentage variation may be considered for securities falling under a low-price range.**

- **Indexing to Market Movements:** The price variation in the securities of the listed entity may be indexed to the movement in Nifty 50 or the Sensex to factor in market dynamics.
- **Extension of Timeline:** SEBI has extended the timeline for rumour verification to February 1 and August 1 for the top 100 and top 250 listed firms by market capitalization, respectively.
- **Unaffected Price for Transactions:** The unaffected price would be considered to determine the pricing of transactions when the listed entity confirms the market rumour due to material price movement.
- **Obligation on Promoters and Management:** There is a proposal to cast an obligation upon promoters, directors, Key Managerial Personnel (KMP), and senior management to provide adequate, accurate, and timely responses to queries raised or explanations sought.
- **Use of Classified Information:** If a listed entity has classified certain information as Unpublished Price Sensitive Information (UPSI) and does not confirm, deny, or clarify a market rumour related to such information, the media reports should not be used later by an insider as a defense that the information was “generally available.”
- This proposed change aims to align rumour verification with market movements and enhance transparency and timely communication in response to material developments.

About Price Move and Material Movement?

Price Move:

- **Definition:** A price move refers to a change in the price of a security, such as a stock, bond, or commodity, over a specific period of time.
- **Significance:** Traders and investors closely monitor price moves to make informed decisions about buying or selling securities.
- **Price moves can be influenced by various factors, including market news, economic indicators, corporate earnings, and geopolitical events.**

Material Movement:

- **Definition:** Material movement, in the context of market regulations, often refers to a significant change or event related to a company or its securities that could impact the market value of those securities.
- **Significance:** Material movements are typically associated with information that

is considered “material” or important enough to influence an investor’s decision.

- **Material information is often non-public and may include details about financial performance, mergers and acquisitions, regulatory approvals, or other events that could affect the company’s stock price.**

About SEBI (Prohibition of Insider Trading) Regulations, 2015

- The Securities and Exchange Board of India (SEBI) (Prohibition of Insider Trading) Regulations, 2015, **aims to prevent insider trading in securities.**
- **Insider trading refers to the buying or selling of a company’s securities by individuals who have access to non-public, material information about the company. The regulations aim to maintain a level playing field for all market participants and ensure fairness and transparency in the securities market.**
- The regulations define **insider trading** and specify who qualifies as an “insider.” **Insiders include company officials, connected persons, and those in possession of unpublished price-sensitive information (UPSI).**
- The regulations prescribe penalties for insider trading violations, which may include monetary fines, disgorgement of profits, and prohibition from trading in the securities market.
- The SEBI (Prohibition of Insider Trading) Regulations, 2015, play a crucial role in fostering investor confidence and ensuring the integrity of the securities market in India by preventing the misuse of confidential information for trading purposes.

Topic 28. ROLE OF DFS IN IMPROVING BANK ASSET QUALITY IN 2023

Important for the subject: Economy

Reduction of Non-Performing Assets (NPAs):

The DFS have played a crucial role in **significantly reducing NPAs in Scheduled Commercial Banks (SCBs).**

- **Gross NPAs decreased from ₹9,33,779 crore in March 2019 to ₹5,71,515 crore in March 2023.**

Measures Affecting NPAs:

- The effectiveness of measures such as the **Insolvency and Bankruptcy Code (IBC), amendments to the SARFAESI Act, and the Prudential Framework for Resolution**

of Stressed Assets is highlighted.

Financial Inclusion Initiatives:

- The DFS emphasizes initiatives taken for financial inclusion, including schemes such as **Pradhan Mantri Jan Dhan Yojana (PMJDY), Pradhan Mantri Jeevan Jyoti Bima Yojana, Pradhan Mantri Suraksha Bima Yojana, MUDRA, Stand Up India, and Atal Pension Yojana.**
- These initiatives aim to provide basic banking services, insurance, and pension schemes to vulnerable sections of society.

Debt Recovery Measures:

- The government and RBI have taken comprehensive measures for **debt recovery, enabling SCBs to recover a total amount of ₹7.16 lakh crore** during the last five financial years. Changes in credit culture, especially through the IBC, are highlighted.

Digital Payments and Financial Reforms:

- The DFS has been actively promoting a robust digital payments ecosystem. The **DIGIDHAN Mission, under the DFS**, has contributed to the significant growth of digital payment transactions.
- The DFS continued the momentum of financial reforms, focusing on risk assessment, NPA management, financial inclusion, customer service, digital transformation, and more.

Agriculture Sector Initiatives:

- The DFS facilitated robust credit disbursement in the agriculture sector, with **agricultural credit increasing from ₹8.45 lakh crore in FY15 to ₹21.55 lakh crore in FY23.**
- The **Kisan Credit Card (KCC) scheme** is mentioned as playing a pivotal role in providing credit to farmers.

EASE Reforms:

- The DFS continued the momentum of reforms, **building on initiatives like the Enhanced Access and Service Excellence (EASE) Reform agenda.**
- The EASE Reforms focus on various aspects, **including digital customer experience, analytics-driven business improvement, tech and data-enabled capability building, and HR operations enhancement.**

Brief on various schemes under DFS –

Pradhan Mantri Jan Dhan Yojana (PMJDY):

- **Objective:** PMJDY, launched in August 2014, aims to provide financial inclusion to every household in India.

Key Features:

- Opening of basic savings bank accounts with no minimum balance requirement.
- Access to financial services such as insurance, credit, and pension.
- RuPay debit card for account holders.
- Direct Benefit Transfer (DBT) and subsidies directly credited to the accounts.
- Overdraft facility for eligible account holders.

Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY):

- **Objective:** PMJJBY, launched in May 2015, provides life insurance coverage at an affordable premium.

Key Features:

- Life insurance coverage of ₹2 lakhs in case of the insured's death due to any reason.
- Annual premium is low, making it accessible to the economically weaker sections.
- The scheme is available to individuals aged 18 to 50 years.

Pradhan Mantri Suraksha Bima Yojana (PMSBY):

- **Objective:** PMSBY, also launched in May 2015, provides accidental death and disability insurance coverage.

Key Features:

- Accidental death and disability coverage of ₹2 lakhs.
- Premium is affordable, making it accessible to a large population.
- The scheme is available to individuals aged 18 to 70 years.

MUDRA (Micro Units Development and Refinance Agency) Scheme:

- **Objective:** Launched in April 2015, MUDRA aims to provide financial support to microenterprises and promote entrepreneurship.

Key Features:

- MUDRA provides funding to microenterprises through various loan products.
- Three categories of loans: Shishu (up to ₹50,000), Kishor (₹50,000 to ₹5 lakhs), and Tarun (₹5 lakhs to ₹10 lakhs).
- The loans support a variety of income-generating activities.

Stand Up India:

- **Objective:** Launched in April 2016, Stand Up India promotes entrepreneurship

among women and SC/ST communities.

Key Features:

- Provides bank loans **between ₹10 lakhs and ₹1 crore** to **at least one SC/ST borrower and one woman borrower per bank branch.**
- **Aims to support greenfield enterprises in the non-farm sector.**

Atal Pension Yojana (APY):

- **Objective:** Launched in May 2015, **APY encourages the unorganized sector to save for their retirement.**

Key Features:

- Provides a **fixed pension between ₹1,000 and ₹5,000 per month** after the age of 60.
- **Contributions based on age and chosen pension amount.**
- **Accessible to individuals aged 18 to 40 years.**

Digidhan Mission:

- **Objective:** DIGIDHAN Mission focuses on **promoting a robust ecosystem for digital payments in India.**

Key Features:

- Aims to **reduce cash transactions and promote digital financial transactions.** Encourages the use of digital payment methods such as UPI (Unified Payments Interface), mobile wallets, and digital banking.
- Seeks to **enhance financial inclusion and reduce the reliance on physical currency.** Enhances the **security and efficiency of transactions** in the digital space.

Kisan Credit Card (KCC):

- **Objective:** The Kisan Credit Card scheme was **introduced to provide timely and hassle-free credit to farmers.**

Key Features:

- Offers farmers a **revolving credit facility to meet their agricultural needs.** Enables farmers to access short-term credit for crop cultivation, harvest, and post-harvest expenses.
- **Simplifies the credit delivery process for farmers,** making it more accessible and farmer-friendly. Promotes financial inclusion and **ensures farmers have timely access to credit.**

Enhanced Access and Service Excellence (EASE) Reform:

- **Objective:** The EASE Reform agenda aims to **bring about positive changes in the functioning of Public Sector Banks (PSBs) in India.**

Key Features:

- Focuses on multiple areas, **including risk assessment, NPA (Non-Performing Asset) management, financial inclusion, customer service, and digital transformation.**
- Aims to improve the **overall efficiency, transparency, and accountability of PSBs.** Promotes the use of technology and data-driven approaches for better decision-making.
- Evolved through **multiple versions (EASE 1.0 to EASE 6.0) with a focus on digital customer experience and operational enhancements.**
- EASE index is prepared by the **Indian Banking Association (IBA) and Boston Consulting Group and commissioned by the Finance Ministry.**

Topic 29. GUIDELINES FOR GOVERNMENT SECURITIES LENDING DIRECTIONS, 2023 BY RBI***Important for the subject: Economy***

The Reserve Bank of India (RBI) has **issued guidelines to permit lending and borrowing in government securities (G-Secs), excluding Treasury Bills.**

Objective:

- The move aims to **deepen the bond market and enhance liquidity in the Government Securities (G-Sec) market.**
- A well-functioning securities lending and borrowing market is expected to contribute to efficient price discovery.

Draft and Finalization:

- In February, the **RBI released the draft RBI (Government Securities Lending) Directions, 2023.** The guidelines have been finalized based on the comments received on the draft.

Eligibility Criteria:

- Government securities issued by the Central Government **excluding Treasury Bills** shall be eligible **for lending/borrowing** under a GSL transaction.
- Securities obtained under a repo transaction, **including through Reserve Bank's Liquidity Adjustment Facility, or borrowed under another GSL transaction shall also be eligible** to be lent under a GSL transaction.
- Government securities issued by the Central Government (**including Treasury Bills**) and the State Governments shall be eligible **for placing as collateral** under a GSL

transaction.

- **Securities obtained under a repo transaction, including through Reserve Bank's Liquidity Adjustment Facility, or borrowed under another GSL transaction shall also be eligible to be placed as collateral under a GSL transaction.**

Collateral Eligibility:

- **G-Secs, including Treasury Bills and state government bonds, are eligible for placing as collateral under a GSL transaction.**

Maturity Tenor:

- **The minimum tenor of a GSL transaction is one day, and the maximum tenor is the maximum period prescribed to cover short sales.**

Impact and Purpose:

- **The lending and borrowing of G-Secs are expected to augment the existing market for 'special repos.**
- **The system aims to facilitate broader participation in the securities lending market, allowing investors to deploy idle securities and enhance portfolio returns.**
- **The introduction of these guidelines is part of the RBI's efforts to create a more robust and liquid securities lending and borrowing market, fostering a healthier bond market ecosystem.**

Government Securities (G-Secs):

- **Government Securities (G-Secs) are debt instruments issued by the government to raise funds from the market.**
- **These securities are considered one of the safest forms of investment because they are backed by the government's credit. The government pays periodic interest to the bondholders and repays the principal amount at maturity.**

Issued by Government:

- **G-Secs are issued by the central government and state governments to meet their financial needs.**

Low Risk:

- **They are considered low-risk investments as they are backed by the government's commitment to repayment.**

Fixed Interest Payments:

- G-Secs pay **periodic interest to bondholders, usually semi-annually or annually.**

Fixed Maturity Period:

- G-Secs have a predetermined maturity period, ranging from a few years to several decades.

Liquidity:

- They can be **traded in the secondary market before maturity, providing liquidity to investors.**

Types of G-Secs:

- **G-Secs include Treasury Bills (T-Bills), Government Bonds, and State Development Loans (SDLs).**

Primary Issuance and Secondary Market:

- G-Secs are initially issued through auctions in the primary market and later traded in the secondary market.

Treasury Bills (T-Bills):

- **Treasury Bills, often referred to as T-Bills, are a specific type of short-term government security.**
- **They are issued by the government to meet short-term financing needs.** T-Bills are typically issued for maturities of 91 days, 182 days, and 364 days.

Short-Term Debt:

- T-Bills have **short maturities**, making them suitable for investors looking for short-term investments.

Discounted Purchase:

- **T-Bills are issued at a discount to their face value.** The difference between the issue price and face value represents the investor's earnings.

No Interest Payments:

- Unlike other bonds, T-Bills do not pay periodic interest. **Instead, investors earn returns by purchasing them at a discount and receiving the face value at maturity.**

High Liquidity:

- T-Bills are highly liquid and can be easily traded in the secondary market.

Risk-Free:

- T-Bills are **considered risk-free** because they are backed by the government.

Primary Issuance and Auctions:

- Like other G-Secs, T-Bills are issued through auctions in the primary market.

Role in Monetary Policy:

- T-Bills play a role in the implementation of monetary policy by the central bank. Secs encompass a broader category of government debt, including Treasury Bills, Government Bonds, and State Development Loans.
- Treasury Bills are a specific type of short-term G-Sec with unique characteristics suitable for investors with short-term investment horizons.

Topic 30. INSIGHTS ON INDIA'S FINANCIAL TRANSFORMATION

Important for the subject: Economy

Transformation from Savers to Investors:

Uday Kotak observes a **shift in India from a nation of savers to investors**. Interest in financial markets increased post the global financial crisis.

Historical Shift in Saver Behaviour:

- In the early 80s, **Indian savers lacked confidence in financial assets, favouring gold and land**. Over time, savers started allocating savings to bank deposits, UTI, and LIC.

Equity Investment Perception in the 90s:

- Investing in equities was considered speculative in the 90s.
- Companies sought capital from foreign institutional investors (FIIs).

Factors Contributing to Investor Transformation:

- Growth of mutual fund platforms, cash equities, derivatives markets, insurance funds, and global private equity.

Introduction of AIFs and a lower tax regime for equity.

Recommendations for Sustaining Growth:

- Avoiding bubbles through effective policy, regulation, education, and quality financial instruments.
- Addressing issues like tax arbitrage in debt, double taxation on dividends, and retrospective tax.

Financial Sector's Role in India's Aspiration:

- Kotak emphasizes the financial sector as a key engine for delivery in India's growth. Coexistence of saver/borrower and issuer/investor models in the financial sector.

Stock Market Optimism:

- **Benchmark indices like Sensex and Nifty reaching record highs.**
- **Analysts foresee robust economic growth in 2024** driven by domestic consumption, government spending, and private investments.

Influencing Factors in 2024:

- Events such as the **2024 Lok Sabha elections, the first Union Budget post-elections, global geopolitical issues, US elections, and global inflation** may impact the domestic stock market.

BSE (Bombay Stock Exchange) and NSE (National Stock Exchange):

- **BSE (Bombay Stock Exchange):** One of the oldest stock exchanges in Asia, based in Mumbai.
- **BSE Sensex: Key stock market index representing the performance of top companies listed on BSE.**

NSE (National Stock Exchange):

- Leading stock exchange in India, headquartered in Mumbai.
- **Nifty 50: Benchmark stock market index representing the performance of top companies listed on NSE.**

FDI (Foreign Direct Investment) and FII (Foreign Institutional Investment):

FDI (Foreign Direct Investment):

- **Investment made by a foreign entity in the ownership of facilities or operations in a country.** Direct involvement in the business operations, **indicating a lasting interest.**

FII (Foreign Institutional Investment):

- Investment made by foreign institutions in the financial markets of a country.
- **Involves buying financial assets like stocks and bonds without direct control over the invested businesses.**

Topic 31. FED RATE CUT AND ITS IMPACT ON THE INDIAN ECONOMY

Important for the subject: Economy

Fed Rate Cut:

Refers to the **reduction in the federal funds rate, the interest rate at which banks lend to each other overnight**. Decided by the Federal Reserve (Fed) in the United States.

Impact on Indian Economy:

- **Capital Flows:** A rate cut may lead to capital outflows from emerging markets like India as investors seek higher returns in the US.
- **Exchange Rates:** Depreciation pressure on the Indian rupee due to capital outflows.
- **Borrowing Costs:** Lower interest rates globally can result in reduced borrowing costs for Indian businesses.
- **Equity Markets:** Positive impact on Indian stock markets due to increased liquidity and lower global interest rates.

Global Economic Conditions:

- A Fed rate cut reflects concerns or measures taken to stimulate the US economy.
- **Global economic conditions, trade relations, and overall market sentiment are influenced.**

Policy Responses:

- The Reserve Bank of India (RBI) may **adjust its monetary policy in response to global rate movements**.
- India's central bank may consider **measures to manage inflation, capital flows, and exchange rates**.

Topic 32. LEVY 20-30% HEALTH TAX ON FOOD HIGH IN SUGAR, SALT, FAT: STUDY

Important for the subject: Economy

Public health researchers recommend **implementing a health tax** ranging from **20% to 30%**, in addition to the **Goods and Services Tax (GST)**, specifically targeting **sugar, sugar-sweetened beverages (SSBs), and foods high in sugar, salt, and fat (HFSS)**.

- This initiative **aims to curtail excessive consumption of these items**. The proposed tax primarily focuses on **bulk purchasers** such as **confectionery and sweet manufacturers**, **aiming** to decrease their demand for sugar. This strategy intends to **influence**

consumption patterns at the production level.

Impact of these taxes:

- Applying the concept of **Price Elasticity**, researchers anticipate a **2% reduction** in demand among **regular consumers** for every **10% increase in sugar prices**.
- However, for **bulk buyers**, a **higher price elasticity** suggests a potential **13-18% decrease** in demand with a **30% tax increase** over the existing **18% GST**.
- Similar tax increments of **10-30%** on **sugar-sweetened beverages** could result in a **demand decline** between **7%** and **30%**.
- For **HFSS products**, the anticipated decrease in demand ranges from **5%** to **24%**, correlating with tax variations.

Revenue and Health Outcomes:

- Besides potentially **reducing consumption**, these heightened taxes could significantly **boost government revenue** by **12-200%**.
- The overarching goal is to **mitigate health concerns** associated with **excessive sugar intake**, including **obesity**, **diabetes**, and **related health issues** prevalent in **India** and globally.

Global Taxation Trends:

- Over **70 countries** have implemented **similar taxation strategies** on sugar, **SSBs**, and **HFSS products**.
- These initiatives have showcased promising outcomes in terms of decreased consumption and improved public health in various regions, including **Mexico**, **Chile**, **Saudi Arabia**, **Argentina**, and **South Africa**.

India's Sugar Consumption Challenge:

- **India** holds the **title of the world's largest sugar consumer**, leading to substantial health challenges.
- **Global average consumption** of sugar is **22 kg per person per year**, an average **Indian** consumes **25 kg per year**.
- The current sugar intake exceeds the **World Health Organization's recommended threshold (no more than 50 grams of sugar per day)**, indicating a pressing need for interventions to address rising health issues linked to excessive sugar consumption.

Key terms:

- **High Fat Sugar Salt foods (HSSF)** are known for their negative impact on health. A **negative externality** is something that impacts a person or people who are uninvolved in a situation. Example: Smoking cigarettes or burning coal.

- **Internalities:** Harm caused to individuals due to limited understanding influenced by marketing.
- **Non-regressive Tax:** A tax that does not disproportionately burden lower-income individuals.

Topic 33. TEXTILE SECTOR FACES ESG CHALLENGES

Important for the subject: Economy

The textile industry is coming under greater Environmental, social and governance (ESG) scrutiny.

Facts about Textile Industry in India:

- The Indian textile and apparel market is currently estimated at over \$150 billion, of which, **export constitutes over \$40 billion.**
- A recent report pointed out that the global textile and apparel trade is set to reach **\$1,000 billion by 2025-26** and that in the same period the Indian textile and apparel market will reach \$250 billion.
- **India holds a 4% share of the \$840 billion global textile** and apparel market, and is in **fifth position.** It contributes 3% to Indian Gross Domestic Product, 7% of Industrial Output, 12% to the export earnings of India and employs more than 21% of total employment.
- **India is also the second largest producer of silk** in the world and 95% of the world's hand woven fabric comes from India. **India is the 6th largest producer of Technical Textiles** with 6% Global Share, largest producer of cotton & jute in the world.

About ESG:

- ESG stands for: “**Environmental, Social and Governance**”. The term ESG was **coined by the Global Compact in 2004.**
- ESG is described as a **set of principles** (policies, processes, metrics, etc.) that organizations apply to limit negative impact or enhance positive impact on the environment, society and governance bodies.
- It refers to a set of **non-financial measures** that reflect a corporation's impact on the environment and society.
- ESG can be considered a **subset of sustainability**, which is defined by the United Nations World Commission on Environment and Development as ‘meeting the needs of present generations without compromising the ability of future generations to meet their own needs’.
- Investors and stakeholders look at **three key factors** when evaluating a company's

sustainability and social impact under ESG.

- **Environmental Factors:** This relates to the company's impact on the natural environment, including energy use, greenhouse gas emissions, waste management and resource consumption.
- **Social factors:** This refers to the company's impact on society, including relationships with employees, customers, suppliers and communities.
- **Governance Factors:** This focuses on the company's management and decision-making structures, including board composition, executive rules and transparency.

Functioning of ESG:

- ESG serves as an **evaluation technique** that takes into account environmental, social and governance issues. In the private sector there is a set of ESG criteria that are used to evaluate company risks and practices.
- ESG frameworks are important for **sustainable investing** because they can help individuals or other corporations determine whether a company is aligned with their values, as well as analyze the ultimate value of a company for their purposes.

Significance of ESG:

- ESG covers issues that are, for the most part, **long-term considerations**.
- ESG risks are similar to other business risks in that they are important to understand, identify, quantify and manage, but some ESG risks have the added complexity of being unpredictable.
- Another characteristic of **ESG risks is that they can be very costly**. Some examples of ESG risk management include assessing climate change risks to regular operations, assessing workplace culture, company diversity, etc.
- ESG risk management supports sustainable, long-term growth by actively evaluating potential issues.

Difference between ESG and CSR:

- India has a strong Corporate Social Responsibility (CSR) policy which obliges corporations to engage in initiatives that contribute to the welfare of society.
- This mandate was codified into law with the passage of the 2014 and 2021 amendments to the **Companies Act of 2013** which **required**:
- Companies with a net worth of **₹500 crore** or a minimum turnover of **₹1,000 crore** or a net profit of ₹5 crore in any financial year.
- Companies spend at **least 2% of their net profit** in the last three years on CSR activities.

Implications for Indian companies:

- ESG will play an important role in expanding **risk management** with thorough due diligence.
- Companies wishing to maximize their opportunities in the global economy need to **adapt to these new requirements** and adjust their organizations accordingly.
- Indian companies looking to expand their ESG risk management need to conduct **thorough due diligence that can stand up to scrutiny**.
- It is the practice of making investments that **not only generate financial returns**, but also create positive social and environmental impacts.

Topic 34. WHY RANSOMWARE ATTACKS ON INDIAN IT FIRMS ARE A CAUSE FOR CONCERN?

Important for the subject: Science and Technology

A 2023 study conducted by Sophos, a cybersecurity company, **showed that 73% of organizations reported being victims of ransomware attacks, up from 57% the previous year.**

What is Ransom ware?

- Ransomware is a **type of malware that prevents users from accessing their system or personal files and demands ransom payment in order to regain access.**
- The malware may usually be injected remotely by tricking the user into downloading it upon clicking an ostensibly safe web link sent via email or other means, including hacking.
- It can spread throughout the network by exploiting existing vulnerabilities. Ransom ware attacks can be accompanied by **theft of sensitive data**. Recently, Spice jet, Oil India and HCL had faced a cyber-threat.

How are cyber-attacks dealt in India?

Indian Computer Emergency Team (CERT-In) –

- CERT-In is the **national nodal agency for responding to computer security incidents as and when they occur.**
- CERT-In is operational since January **2004**. The constituency of CERT-In is the Indian Cyber Community.

CERT-In has been designated to perform the following functions:

- Collection, analysis and dissemination of information on cyber incidents. Forecast and alerts of cyber security incidents. Emergency measures for handling cyber security incidents Coordination of cyber incident response activities.

- Issue guidelines, advisories, vulnerability notes and whitepapers relating to information security practices, procedures, prevention, response and reporting of cyber incidents. Imparting training to computer system managers.
- **National Cyber Security Coordinator** – The National Cyber Security Coordinator, **under the National Security Council Secretariat**, coordinates with different agencies at the national level on cybersecurity issues.
- **The National Critical Information Infrastructure Protection Centre** – It has been set up for the protection of national critical information infrastructure.
- **The Cyber Swachhta Kendra** – It is a **Botnet Cleaning and Malware Analysis Centre** that has been launched for detection of malicious software programmes and to provide free tools to remove them.
- **The National Cyber Coordination Centre** – It works on creating awareness about existing and potential threats.
- **Cyber Crisis Management Plan** – The government has formulated a Cyber Crisis Management Plan for countering cyber-attacks.

Topic 35. CAN AMAZON STRATEGY HELP BLUE ORIGIN TOP SPACE?

Important for the subject: Science and Technology

An Amazon veteran tapped by Jeff Bezos to lead Blue Origin aims to pull from the e-commerce giant's speedy manufacturing playbook to give the space company's rocket launch and moon lander business a badly needed boost against Elon Musk's SpaceX.

Space Tourism

- Space tourism is about humans travelling into space for recreational purposes. **It seeks to give laypeople the ability to go to space for recreational, leisure or business purposes.**
- It will make space more accessible to those individuals who are not astronauts and want to go to space for non-scientific purposes. **Three private companies – Blue Origin, Virgin Galactic and SpaceX are now spearheading the human endeavour to explore space.**
- Their progress will decide whether space travel will one day become as accessible as air travel.

Previous Space Tourists:

- The **first space tourist was US millionaire Dennis Tito**, who in 2001 paid USD 20 million to hitch a ride on a Russian Soyuz spacecraft to visit the international space station and spent eight days there.

- After Tito, there were only seven other private citizens who travelled to space until 2009 when the Russian space agency wound up the business of selling tickets to private citizens.
- **Space Adventures is the only private company to send paying customers to orbital space so far.** In 2004, test pilot Mike Melville became the first private astronaut to fly beyond the Karman Line.

Significance:

- **Huge Market:** There is an estimated market of 2.4 million people for such flights.
- **Base for Testing:** It can provide a base for testing supersonic travel between different destinations on earth, significantly compressing travel time. Besides, it heralds the entry of the private sector into this arena.

Topic 36. ICMR INITIATES STEPS TO PROVIDE EASY TO USE NON-INVASIVE TESTING TO TACKLE ANAEMIA IN INDIA

Important for the subject: Science and technology

Indian Council of Medical Research (ICMR) initiates testing and treatment of anaemia, with a special focus on pregnant women and on school-going adolescents

- **Anaemia:** Anemia is a condition in which the body does not have enough healthy red blood cells.
- **WHO criteria:** The World Health Organization (WHO) defines anaemia as a condition when haemoglobin levels fall below 12 grams per decilitre (g/dL) for women in the reproductive age group and below 11.0 g/dL for children under five.
- The **Indian Council of Medical Research (ICMR)** accepted that anaemia continued to be a **major public health problem** in India despite the comprehensive **Anaemia Mukh Bharat (AMB) programme**.
- ICMR will employ **digital methods** and **point-of-care treatment**, focussing on **pregnant women** and on **school-going adolescents**.

Anaemia prevalence in India:

- As per the **National Family Health Survey 5 (2019-21)** Anemia prevalence in India is as follows:

Category	Prevalence rate
Men (15-49 years)	25.0%

Women (15-49 years)	57.0%
Adolescent boys (15-19 yrs)	31.1%
Adolescent girls (15-19)	59.1 %
Pregnant women (15-49 years)	52.2 %
Children (6-59 months)	67.1%

About Test and treat strategy:

- **Non-invasive hemoglobinometer:** For the test and treat method, a non-invasive hemoglobinometer that is user-friendly and simple enough for everyone to use is needed.
- **Make in India:** ‘Make in India’ non-invasive hemoglobinometer devices are available over the past few years.
- **Validation study:** ICMR is carrying out a validation study of such non-invasive hemoglobinometer devices followed by health technology assessment for evaluating its suitability for the AMB programme

About Anemia Mukh Bharat:

- **Launch:** The Government of India launched the Anaemia Mukh Bharat (AMB) strategy in 2018 to reduce the prevalence of anaemia in women, children and adolescents through a life cycle approach.
- **Objective.** The strategy aims at preventive and curative mechanisms through a 6X6X6 strategy including six target beneficiaries, six interventions and six institutional mechanisms for all stakeholders

About ICMR:

- **Establishment:** In 1911 as Indian Research Fund Association (IRFA), later in 1949, IRFA was renamed ICMR.
- **Body:** It is neither a statutory body nor a regulatory body. It is an Autonomous Body registered under the Society Act XXI of 1860.

Headquarters: New Delhi.

- **Function:** It helps in the formulation, coordination and promotion of biomedical research, and is one of the oldest medical research bodies in the world.

Topic 37. INDIA AND RUSSIA INK 'KEY' PACTS RELATED TO KUDANKULAM NUCLEAR POWER PLANT

Important for the subject: Science and Technology

In a major boost to their time tested partnership, India and Russia signed some “very important” agreements related to the construction of the future power generating units of the Kudankulam nuclear power plant.

Kudankulam Nuclear Power Plant:

India's largest nuclear power plant is located in Tamil Nadu.

- Construction commenced in March 2002 with technical assistance from Russia. The first power unit has been operational since February 2016, operating at a capacity of 1,000 MW. Full operational capacity expected by 2027, according to Russian state media.

What is the Status of Nuclear Energy in India?

- Nuclear energy is the **fifth-largest source of electricity in India, contributing about 2% of the country's total electricity generation.**
- India currently has over **22 nuclear reactors** in 7 power plants across the country, which together produce **6,780 MW of nuclear power.**
- Of these reactors, **18 are Pressurized Heavy Water Reactors (PHWRs) and 4 are Light Water Reactors (LWRs).**
- In January 2021, the Kakrapar Atomic Power Project (KAPP-3), India's first 700 MWe unit and the biggest indigenously developed variant of the PHWR, was connected to the grid.
- The Indian government has allowed joint ventures between the **Nuclear Power Corporation of India Limited (NPCIL) and public sector undertakings (PSUs) to enhance India's nuclear program.**
- NPCIL is now in joint ventures with the National Thermal Power Corporation Limited (NTPC) and the Indian Oil Corporation Limited (IOCL). The government is promoting the expansion of nuclear installations to other parts of the country. For example, an upcoming nuclear power plant in Gorakhpur town in Haryana will become operational in the near future.
- India is also working on an entirely indigenous thorium-based nuclear plant, “**Bhavni**,” which will be the first of its kind using Uranium-233. The experimental thorium plant “**Kamini**” already exists in Kalpakkam.

Topic 38. MINISTRY SENDS SOCIAL MEDIA FIRMS ADVISORY TO REGULATE DEEPFAKES

Important for the subject: Science and Technology

The Ministry of Electronics and Information Technology said that it had sent another advisory to social media firms to comply with the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.

What are Deep fakes?

- Deep fakes are **highly realistic and often convincing digital forgeries of videos, images, or audio recordings**. They are generated using **artificial intelligence (AI) and machine learning techniques**, particularly deep learning, from which the term “deep fake” is derived.
- Deep fakes are made using algorithms called generative adversarial networks (GANs), among other techniques.
- A GAN consists of two parts: the generator, which creates images or videos, and the discriminator, which evaluates their authenticity. They work in tandem to improve the quality of the forgeries.
- With deep fake technology, creators can make people appear to say or do things they never did. This includes facial expressions, lip movements, voice, and even body language if full-body deep fakes are made.

Government's Action Against Deep fakes

- **Issuing Notices:** The IT Ministry has sent notices to **social media intermediaries** (like Facebook, Twitter, Instagram, etc.) reminding them that online impersonation, including the creation and dissemination of deep fakes, is illegal under **Section 66D of the Information Technology Act, 2000**.
- **Content Takedown:** The IT Ministry has instructed these platforms to remove content that qualifies as **deep fakes within 36 hours**, as required by the IT Rules, 2021.
- **Due Diligence and Reasonable Efforts:** The IT Ministry has told social media companies that they need to exercise due diligence and make reasonable efforts to identify and flag misinformation and deep fakes.
- **Prohibition of Impersonating Content:** The IT Rules, 2021, as cited in the article, specifically prohibit hosting any content that impersonates another person. This includes deep fakes where someone's appearance and voice can be manipulated to appear as someone else.
- **Requirement for Prompt Action:** Social media firms are required to quickly take down artificially morphed images or videos of an individual when they are alerted to such

content.

Laws Against Deep fakes in India

- India does **not have any specific laws** that exclusively address deep fakes. However, various provisions of existing laws can be applied to tackle issues arising from deep fakes.

Section 66E of the IT Act of 2000:

- This section applies in cases of deep fake offenses that entail recording, publishing, or **sending a person's photographs in mass media, infringing on their privacy**. Offenders face up to **three years in prison** or a fine of up to two lakh rupees.

Section 66D of the IT Act of 2000:

- It allows for the prosecution of those who utilize communication devices or computer resources with the criminal goal of cheating or impersonating someone. It is punishable by up to **three years in prison** and/or a fine of up to one lakh rupees.

Copyright Protection:

- The Indian Copyright Act of 1957 protects works such as films, music, and other **creative content**.
- Copyright holders can sue persons who construct **deep fakes utilizing copyrighted works without permission**. Penalties for copyright infringement are set out in **Section 51 of the Copyright Act**.

Government Advisory:

- On January 9, 2023, the Ministry of Information and Broadcasting issued a warning to media outlets to be cautious when **airing content that could be modified or tampered with**.
- The Ministry also suggested that **manipulated content be labeled as "manipulated" or "modified" to alert viewers** that the content has been altered.

Topic 39. WHAT INCENTIVES DO SCIENTISTS HAVE TO STUDY RARE DISEASES

Important for the subject: Science and Technology

The 2024 Breakthrough Prizes laureates demonstrate the cutting edge ways scientists are making use of basic science to improve the quality of human lives. But they also highlight systemic, non-scientific factors that influence what scientists choose to study and who gets to access the fruits of their labour.

- Created in 2010 by Silicon Valley entrepreneurs: Milner, Mark Zuckerberg, Priscilla Chan (Facebook), and Sergey Brin (Google).

Acknowledges top scientists globally in fundamental sciences.

- Categories include **mathematics, fundamental physics, and life sciences. First awarded in 2012;** inaugural ceremony hosted by Morgan Freeman.
- The Breakthrough Prizes, often dubbed the “**Oscars of Science,**” Awardees receive \$3 million each, surpassing the Nobel laureates’ \$1 million prize.
- Includes additional prizes like New Horizons in Physics and Mathematics and the Maryam Mirzakhani New Frontiers Prize for early-career researchers.

Rare Diseases

- Rare diseases, also known as **orphan diseases, pose unique challenges due to their low prevalence in the population.**

Characteristics of Rare Diseases:

- Rare diseases are debilitating lifelong conditions occurring infrequently in the human population. WHO defines rare diseases with a **prevalence of 1 or less per 1000 population.**
- In India, a prevalence of less than **100 patients per 100,000 people** is considered as a rare disease.

Examples Of Rare Diseases:

Tyrosinemia-Type 1:

- A **rare autosomal recessive genetic metabolic disorder.**
- Characterized by a deficiency of the enzyme fumarylacetoacetate hydrolase (FAH).
- Results in the abnormal accumulation of tyrosine, potentially causing severe liver disease.

Gaucher’s Disease:

- Characterized by the **accumulation of glucocerebroside in organs.** Organs, particularly the spleen, liver, and bone marrow, enlarge and may suffer impaired function.

Wilson’s Disease:

- A rare genetic disorder leading to the **accumulation of copper in organs.**
- Affects the liver, brain, and cornea.

Dravet-Lennox Gastaut Syndrome:

- Two distinct types of epileptic syndromes.
- **Dravet syndrome:** A severe form of epilepsy beginning in infancy.
- **Lennox-Gastaut syndrome:** Childhood-onset epilepsy with multiple seizure types and

cognitive impairment.

Rare Diseases In India:

- Approximately **450 rare diseases** identified, with 80% of patients affected by around 350 rare diseases.
- Estimated burden of 80 to 96 million cases annually in India. 70-80% of rare diseases are genetic, and the majority remain asymptomatic until later in life.
- Less than 5% of rare diseases in India have available therapies.

Government Interventions:

National Policy for Rare Diseases, 2021:

- Aims to lower the incidence and prevalence of rare diseases through an integrated preventive strategy.
- Encompasses awareness generation, screening, and counseling programs.

Production Linked Incentive Scheme 2.0 for Pharmaceuticals:

- An INR 15,000 Crore initiative supporting orphan drugs development.
- Targets Category 1 pharmaceutical goods in the Production Linked Incentive Scheme.

Central Drugs Standard Control Organisation (CDSCO):

- Provisions for fast-track processing of applications for rare disease drugs in drug trials and experimental therapies.
- Exemption of application fees for potential drug candidates.

Genomics for Understanding Rare Diseases: India Alliance Network (GUARDIAN):

A non-profit clinical genomics research network.

- Establishes a network of clinicians and scientists for extensive clinical genomics research in India.

Council of Scientific & Industrial Research (CSIR):

- Establishes the Indian Genetic Disease Database (IGDD). Tracks mutations in causal genes for genetic diseases common in India, providing insights to physicians and researchers.

Topic 40. INS IMPHAL (PENNANT D68)

Important for the subject: Science and Technology

INS Imphal commissioned in the Indian Navy.

INS Imphal (**Pennant D68**) is the **third of four warships** of **Project 15B** that together form

the **Visakhapatnam class stealth-guided missile destroyers**. It is built by Mazagon Dock Shipbuilders Limited (MDSL)

- The ship measures **163m in length, and 17m in breadth** with a **displacement of 7,400 tonnes** and is amongst the most potent warships built in India.
- The ship has a '**combined gas and gas**' (COGAG) configuration integrating **four gas turbines**. The propulsion system **allows the ship to reach a maximum speed of 30 knots and a maximum range of 4000 nautical miles**.
- These ships are **equipped with BrahMos supersonic cruise missiles** and long-range **Surface-to-Air Missiles**.
- The ship has **several indigenous weapons** systems like **medium range Surface-to-Air Missile, indigenous torpedo tube launchers, anti-submarine indigenous rocket launchers and 76-mm super rapid gun mount**.
- The class also has a **total atmospheric control system (TACS)** that offers **protection to the crew from chemical, biological and nuclear threats**.
- It can **operate two multi-role helicopters**, including Sea King or HAL Dhruv. **INS Imphal** is the **first warship to have been named after a city from the northeast**.

Few of Indian Navy Warships Projects

Project 17 – Shivalik class Frigate.

- The Shivalik class or **Project 17 class is a class of multi-role frigates in service** with the Indian Navy.

Project 15 – Delhi Class destroyers.

- Delhi-class destroyers are guided-missile destroyers of the Indian Navy

Project 15A – Kolkata Class Destroyer

- The Kolkata class (Project 15A) are a class of **stealth guided missile destroyers**

Project 15B – Visakhapatnam Class Destroyer

- The Visakhapatnam class (Project 15B) is a class of **stealth guided missile destroyers** currently being built for the Indian Navy.

Project 17A

- The Project 17A-class frigate is **follow-on of the Project 17 Shivalik-class frigate for the Indian Navy**.

Project 75

- Project 75 (P75) involves the acquisition of **six ships of the Kalvari-class diesel-electric**

attack submarines.

Project 75I

- **6 Diesel submarines** with Air Independent Propulsion System (AIP) technology for the Indian Navy.

Some facts about Project 15B

- The **Visakhapatnam-class destroyers**, also classified as the **P-15 Bravo class**, or simply **P-15B**, is a class of **guided-missile destroyers** currently being built for the Indian Navy.
- The Visakhapatnam class is an **upgraded derivative of its predecessor, the Kolkata class**, with improved features of stealth, automation and ordnance.
- A total of **four ships are being built** by Mazagon Dock Limited (MDL), under the Make in India
- These **four ships are Visakhapatnam, Mormugao, Imphal, Surat**. The **first vessel of the class, INS Visakhapatnam** was commissioned in **November 2021**. The **second ship INS Mormugao** in **December 2022**.

Topic 41. FOR HUNTINGTON'S DISEASE CLUES, SCIENTISTS ARE LOOKING IN FRUIT FLIES

Important for the subject: Science and Technology

Researchers from Hungary, genetically engineered fruit flies (*Drosophila melanogaster*) to express the poly glutamine tract of a mutated human HTT gene in their nervous system by using a gene called Gal4 from baker's yeast (*Saccharomyces cerevisiae*).

- The medical genetics clinic at the Nizam's Institute of Medical Sciences, Hyderabad sees three to four patients with Huntington's disease every month.

About Huntington's disease:

- **Genetic / Inherited:** Huntington's disease (HD) is an inherited disorder that causes nerve cells (neurons) in parts of the brain to gradually break down and die.
- **Affects neural system:** The disease attacks areas of the brain that help to control voluntary (intentional) movement, as well as other areas.
- **Causes:** A gene called HTT are involved in the production of a protein called hunting in.
- **Mutation:** When these genes mutate, they provide faulty instructions leading to production of abnormal hunting proteins and these form into clumps.

- The clumps disrupt the normal functioning of the brain cells, which eventually leads to death of neurons in the brain, resulting in Huntington disease.
- **Treatment:** Treatment consists of supportive therapy to manage symptoms
- **Cure:** No cure exists, but drugs, physiotherapy and speech therapy can help manage some symptoms.

About Glutamine repeats:

- **Mutated version of Htt:** The patient's misfortune is that they carry a mutated version of a gene called HTT. The HTT gene codes for a protein called huntingtin, or Htt.
- **Destroys Neural systems:** Nerve cells requires the Htt protein for their normal functioning and survival.
- The mutated gene which encodes an abnormal Htt protein that instead destroys the neurons that regulate movement, thinking, and memory.
- **Inheritance:** Each one of us has two copies of the HTT gene of which one is inherited from the father and one from the mother.
- The disease is triggered even if only one copy of the gene is mutated while the other is normal.

Clues from fruit flies

- **Recent study:** In the new study from Hungary, the researchers genetically engineered fruit flies (*Drosophila melanogaster*) to express the polyglutamine tract of a mutated human HTT gene in their nervous system.
- **About Gal4p and UAS:** They used a gene called Gal4 from baker's yeast (*Saccharomyces cerevisiae*), containing information with which cells manufacture a protein called Gal4p. This protein binds specifically to a short DNA sequence called the upstream activating sequence (UAS)
- **Gene expression:** DNA sequence for the Gal4p protein when is placed downstream of a fly gene called elav, leading to expression of the Gal4p protein in all of the fly's neurons. Expressing the longer tract produced symptoms in the fruit flies resembling those of Huntington's disease in humans while on the other hand expressing the shorter tract did not.
- **The Science of Yod1 gene:** On investigating 32 genes it was found that excessive expression – or overexpression – of gene called Yod1, removed all of the disease-like effects in the flies including the neurodegeneration, impediments to motor activity, and lower viability and longevity.

Topic 42. WILL SMART LANDER FOR INVESTIGATING MOON (SLIM) REVOLUTIONIZE LUNAR LANDING

Important for the subject: Science and Technology

On December 25, Japan's Smart Lander for Investigating Moon (SLIM) spacecraft entered into orbit around the moon and will land on January 19.

- Japan will become the fifth country to soft-land a robotic craft on the natural satellite. SLIM's success or failure will also affect the upcoming Chandrayaan 4 mission.
- India succeeded with its Chandrayaan 3 mission in August 2023 to demonstrate end-to-end capability in safe landing and roving on the lunar surface.

About SLIM:

- **Spacecraft:** SLIM is a spacecraft built and launched by the Japan Aerospace Exploration Agency (JAXA) on September 7, 2023
- **Low Weight:** It weighed only 590 kg at launch(one-seventh of Chandrayaan 3 3,900 kg at launch).
- **Counterparts:** SLIM was launched with XRISM which is a next-generation X-ray space telescope which is on boarded an H-2A rocket.
- **Other global missions:** JAXA launched SLIM only two weeks after the surface component of India's Chandrayaan 3 mission succeeded and Russia's Luna 25 spacecraft failed.

SLIM and its path to moon:

- **4 months:** SLIM took four months because it followed a longer but more fuel-thrifty route based on weak-stability boundary theory.
- **Kinetic energy:** Once it is launched into an orbit around the earth ,SLIM will swung around the planet multiple times in order to build up its kinetic energy with each swing.
- **Deflection in moon's direction:** On getting nearer to the moon, SLIM instead of slowing down and being captured by the moon's gravity, it allowed itself to be deflected in the moon's direction. This deflection is the result of the combined forces exerted by the earth and the moon.
- **About Hiten:** Physicists worked it out in the late 1980s for another JAXA mission, called 'Hiten'.

SLIM and its objective:

- **Moon sniper:** SLIM's standout feature is its reputation as the "moon sniper" as it will try

to land within 100 meters of its chosen landing site which is an unusually tight limit given the history of moon-landing missions.

- For example, the 'Vikram' lander of Chandrayaan 3 landed at a spot 350 meters away from a predetermined one.
- **Soft land:** SLIM will attempt to soft-land with the smallest ever area tolerance on the moon. The chosen site is near the Shioli Crater, at 13.3° S and 25.2° E., SLIM will use data from JAXA's SELENE orbiter, which ended in 2009.
- **Lower mass:** Its lower mass (only 120 kg excluding fuel) will help in this endeavor by rendering it more maneuverable while its small size will be a test of its economical design.
- **Two rovers:** SLIM will deploy two small rovers called Lunar Excursion Vehicle (LEV) 1 and 2.
- LEV-1, LEV-2, and SLIM will together study the lunar surface near the landing point, collect temperature and radiation readings, and attempt to study the moon's mantle.

How will SLIM affect Chandrayaan 4?

- The terrain near the moon's poles is rocky, pocked with several craters, and full of steep slopes.
- Axiomatically, if there is a suitable landing spot for a (relatively) large landing module or rover, its downrange and cross-range limits will be lower than they were for Chandrayaan 3. The craft will have to land as close to the site as possible, if not at the site itself.

Topic 43. PEGASUS INFECTION FOUND ON INDIAN JOURNALISTS' PHONES AFTER APPLE ALERT

Important for the subject: Science and Technology

The founder editor of The Wire news website, the South Asia editor of the Organised Crime and Corruption Report Project (OCCRP) and other journalists in India were targeted with Pegasus spyware this year, the Security Lab of Amnesty International announced after testing their devices.

About Organised Crime and Corruption Reporting Project (OCCRP)

- The Organized Crime and Corruption Reporting Project is a **global network of investigative journalists with staff on six continents**. Founded in 2006, it **specializes in organized crime and corruption**.
- It publishes its stories through local media and in **English and Russian through its website**. The entity was involved in the coverage of Pegasus spyware as well as Panama

Papers leak. The OCCRP conducted research and published a report on the Adani Group (AG).

About Pegasus Spyware

- Pegasus is a **malware/spyware developed by Israel's NSO Group**. The spyware suite is designed to access any smartphone through **zero-click vulnerabilities remotely**.
- Once a phone is infiltrated, the spyware can access entire data on that particular phone. It also has **real-time access to emails, texts, phone calls, as well as the camera and sound recording capabilities of the smartphone**.

Zero-click exploit

- A zero-click exploit refers to **malicious software installed on a device without the device owner's consent**.
- More importantly, it **does not require the device owner to perform any actions to initiate or complete the installation**.

Topic 44. TRENDY TO TOXIC: IS TURMERIC LOSING ITS GOLDEN HUE?

Important for the subject: Science and Technology

Lead chromate, used to **enhance turmeric's colour**, has raised **safety concerns** due to **high lead levels** found in turmeric samples from households in **Bihar, India**, and larger surveys across **eight districts**, including **other spices exceeding permissible limits**.

Why adulterants are used?

- Brighter spices correlate with better quality, enhancing **turmeric's golden colour**.
- **Lead poisoning impact**: It is a **neurotoxin** that affects children's learning abilities, hampers brain development and increases the risk of heart and brain diseases. The **average blood lead levels in 23 states are above safe levels**.
- **Spice adulterants used are**: Powdered paper pulp, synthetic dyes, metanil yellow and lead chromite.
- **Efforts to tackle spice adulteration**: Raids, educational campaigns, and stricter testing to tackle spice adulteration.
- **Bangladesh successfully eradicated turmeric adulteration** using **raids and education**, providing a potential model for India.
- **Stakeholders**, including **FSSAI and public policy organizations**, emphasize **stringent testing on spice sellers and increasing public awareness** to address this pervasive issue threatening public health.

Health effects of Turmeric:

- Turmeric contains the element ‘**curcumin**’ which provides health benefits. The reports underline that **turmeric** has “**choleric**” **properties**, which means it stimulates the **secretion of bile to improve digestion**.

India’s spice export:

- **India** is the **top producer of spices** globally. **India’s spice exports** have **doubled** in the last nine years, reaching significant values.
- **India** is a **leading producer and exporter of turmeric** in the world. **India produces 80% of turmeric** in the world.

Challenges associated:

- The **high costs** associated with conducting larger-scale studies and the need for comprehensive data to understand the extent of the issue, paving the way for effective **policy interventions**.

Topic 45. ISRO TO LAUNCH XPOSAT AND 10 OTHER PAYLOADS ON JANUARY 1

Important for the subject: Science and Technology

The **Indian Space Research Organisation** will launch the **PSLV-C58 X-ray Polarimeter Satellite (XPoSat) mission** on January 1, 2024.

About X-ray Polarimeter Satellite (XPoSat) mission:

- **XPoSat** is the **first dedicated scientific satellite** from **ISRO** to **carry out research in space-based polarisation measurements of X-ray emission** from celestial sources.
- It carries two payloads, namely **POLIX** (Polarimeter Instrument in X-rays) and **XSPECT** (X-ray Spectroscopy and Timing).
- **POLIX** has been developed by **Raman Research Institute** and **XSPECT** is by **Space Astronomy Group of URSC, Bengaluru**.

Topic 46. RED SEA ATTACKS: REROUTING OF SHIPS TO PUSH UP COST, IMPACT INDIA’S TRADE

Important for the subject: International Relations

Global trade, which is heavily dependent on container shipping, is in troubled waters due to the fallout of the recent attacks by **Iranian-backed Houthi militants** on ships passing through the **Red Sea/Gulf of Aden**.

- Container ships are now being diverted via the **Cape of Good Hope** at the **southern tip of Africa**, resulting in a sharp rise in both the transit time and freight cost.
- These ships burn a million dollars worth of fuel per trip more than they would if they

went via the **Suez Canal**.

Consequences:

- The circuitous **Cape of Good Hope route**, which adds about **6,000 nautical miles** to a typical voyage from Asia to Europe, doubles the travel time to more than a fortnight.
- As ships spend more time sailing, their turnaround time is cur-tailed. Freight charges will double to more than \$2,000 per TEU.

Double Blow

- Global Shipping were facing the drought at Panama canal and now the Red Sea crisis. The **Panama Canal** is another vital link for ships from Asia heading to the Eastern Coast of the United States and Europe.

India's trade using Red Sea route:

- Exports include engineering goods, textiles, and tea, and its imports are electronics and minerals through the Red Sea and the Suez Canal.

Europe accounts for over 65 per cent of India's coffee exports.

- In the short term, insurance rates may increase. Freight charges may go up, which will have an impact on costs. In this dynamic geopolitical situation, **India** is likely to emerge as an important player in strengthening the **food security** of the **Middle East and North Africa region (MENA)**.

Key terms:

- The **Suez Canal** is a man-made 193 km tiny strip of water that connects the **Red Sea** and the **Mediterranean Sea**.
- The **Gulf of Aden** is a deepwater gulf of the **Indian Ocean** between **Yemen** to the **north**, the **Arabian Sea** to the **east**, **Djibouti** to the **west**, and the **Guardafui Channel**, **Socotra** and **Somalia** to the **south**.
- In the **northwest**, it connects with the **Red Sea** through the **Bab-el-Mandeb strait**, and it connects with the **Arabian Sea** to the **east**. To the **west**, it narrows into the **Gulf of Tadjoura** in **Djibouti**. The **Aden Ridge** lies along the middle of the Gulf and is causing it to widen about 15mm per year.
- The **Cape of Good Hope** is a rocky headland on the **Atlantic coast** of the **Cape Peninsula** in **South Africa**. It is not the **southernmost** point of the **African continent**, but **Cape Agulhas** is the southernmost point.

Topic 47. UNSC CLEAR GAZA AID RESOLUTION

Important for the subject: International Relations

UN Security Council calls for Gaza aid, but stops short of demanding a ceasefire.

The UN Security Council passed a **new resolution** calling for **speeding up humanitarian aid deliveries into Gaza**, but **without the original insistence on an “urgent suspension of hostilities”** between Israel and Hamas. The **United States and Russia abstained** from the vote.

- The Health Ministry in Gaza **reported that around 20,000 people have been killed, constituting approximately 1% of the prewar population**, with over **half a million people facing starvation** due to insufficient food entering the besieged territory amid ongoing Israeli airstrikes and ground operations for over 10 weeks.
- The **death toll includes both civilians and combatants**, while Israel reports over 130 of its soldiers killed in the ground offensive.

What is UNSC Resolutions:

- A United Nations Security Council resolution is a **United Nations resolution adopted by the fifteen members of the Security Council**
- The UN Charter specifies in **Article 27** that a **draft resolution on non-procedural matters is adopted if nine or more of the fifteen Council members vote** for the resolution, and if it is not vetoed by any of the five permanent members.
- The term “resolution” does not appear in the text of the United Nations Charter.

Resolutions by the Security Council are legally binding.

- In instances where the council fails to achieve consensus or secure a majority vote for a resolution, an alternative option is the issuance of a **non-binding presidential statement**.
- Such statements are **adopted through consensus**, serving as a means to exert political pressure. They act as a cautionary signal that the Council is closely monitoring the situation, with the implication that additional actions might be taken in the future.

Some more facts about UNSC:

- The **Security Council was established by the UN Charter in 1945**. It is one of the six principal organs of the United Nations.
- The **other 5 organs of the United Nations** are—the **General Assembly (UNGA)**, the **Trusteeship Council**, the **Economic and Social Council**, the **International Court of Justice**, and the **Secretariat**.

- Its **primary responsibility is to work to maintain international peace and security.** The council is **headquartered in New York.**
- UNSC has **15 members of which 5 are permanent and 10 are non-permanent members.** Non-permanent members **elected for two-year terms** by the **UN General Assembly.**
- **Five permanent members are- US, UK, France, Russia, and China.** It is the **only UN body with the authority to issue binding resolutions to member states.**

Topic 48. UN CALLS FOR RESCUE OF 185 ROHINGYA ADRIFT IN INDIAN OCEAN

Important for the subject: International Relations

UN urges rescue of 185 Rohingya adrift in Indian Ocean.

The **United Nations** has **urgently called** for the **rescue of 185 people**, primarily women and children, stranded on a distressed **boat near the Andaman and Nicobar Islands** in the Indian Ocean.

- The **UNHCR refugee agency** reported that about 70 of those on board are children, 88 are women, and at least a dozen are feared to be in critical condition, with one reported death.
- The individuals are **believed to be Rohingya refugees**, and the UNHCR is appealing to coastal authorities to urgently rescue them.
- Rohingya refugees, heavily persecuted in Myanmar, **often undertake risky sea journeys to reach countries like Malaysia or Indonesia.**
- The UNHCR **stressed the need for timely rescue** efforts to prevent a larger tragedy. Thousands of Rohingya attempt such journeys every year, with over 2,000 believed to have done so in 2022.

Some facts about UNHRC:

- It is an **intergovernmental body** within the United Nations system. The UNHRC **replaced the former UN Commission on Human Rights.**
- It was **created by the UNGA on March 15, 2006**, and the **body met in its first session in June, 2006.**
- The **Council is made up of 47 UN Member States** who are **elected by majority vote** through a **direct and secret ballot** at the UNGA. The **membership of the Council** is based on **equitable geographical distribution.**
- **African and Asia-Pacific states have 13 seats each**, **Latin American and Caribbean states have 8 seats**, **Western European and other states have 7 seats**, and **Eastern**

European states have 6 seats.

- The UNGA **takes into account the candidate States' contribution** to the promotion and protection of human rights, as well as their **voluntary pledges and commitments in this regard**.
- The members **serve for three years and are not eligible for immediate re-election** after **serving two consecutive terms**.

Some facts about Rohingya:

- The Rohingya are an **ethnic group**, mainly consisting of **Muslims, and primarily residing in the Rakhine province** of Western Myanmar.
- They **communicate in a Bengali dialect** rather than the widely spoken Burmese language.
- Despite having a longstanding presence in the Southeast Asian nation, **Myanmar views them as individuals who migrated to their territory** during the colonial era. The country **categorizes them as "resident foreigners" or "associate citizens."**

Topic 49. THE EVOLVING ROLE OF THE COLOMBO SECURITY CONCLAVE

Important for the subject: International Relations

In early December, India's National Security Adviser (NSA), Ajit Doval, took part in the **sixth NSA meeting of the Colombo Security Conclave (CSC)**.

- The meeting reviewed the developments and progress made by the CSC in the last year and agreed upon a road map for the year 2024 **to promote a safe, secure, and stable Indian Ocean**.

About Colombo Security Conclave

- The Colombo Security Conclave is a **regional security grouping**. It was initially formed in 2011 as a trilateral Indian Ocean maritime security grouping of India, Sri Lanka and the Maldives.
- It was revived again in 2021. The Colombo Security Conclave has since expanded both its membership as well as scope.
- Colombo Security Conclave envisages sharing intelligence and **collaborating on the security aspects of marine security, human trafficking, counter-terrorism, and cyber security**.
- The fifth edition saw the induction of Mauritius as a new member and the scope of the conclave has been expanded to include **humanitarian assistance and disaster relief**.

Significance

- In light of the current global circumstances, the gathering that focuses on working together for military and security purposes becomes increasingly important in the region.
- **Maritime Security:** The conclave conducts “**CSC Focused Operation**” which plays a key role in keeping the Indian Ocean safe and secure for commercial shipping, international trade and conduct of legitimate maritime activities.
- **Exchange of Information:** It further improves the existing harmony in the region through timely exchange of information.
- **Cooperation between Agencies:** The conclave will aid in greater understanding and interoperability between the security agencies.
- **Cybersecurity:** The grouping helps in addressing key challenges such as Deep Web, Dark Net, Digital Forensics, Cyber Threat intelligence; and Defensive Operations in Cyber Domain.
- **Tackling Environmental Hazards:** Recent incidents like that of MV Xpress Pearl, MT New Diamond, and MV Wakashio caused wide-scale marine pollution in the Indian Ocean. The conclave also focuses its attention in this regard.

Some Other Security Dialogues:

1. **Quadrilateral Security Dialogue (QUAD)**
2. **Raisina Security Dialogue**
3. **India-EU Maritime Security Dialogue**
4. **India's 2+2 Ministerial Dialogue**

Topic 50. INDIAN ASEAN

Important for the subject: International Relations

ASEAN (Association of Southeast Asian Nations):

Formation: ASEAN, established on August 8, 1967, is a **regional intergovernmental organization comprising ten Southeast Asian countries**. The founding members are Indonesia, Malaysia, the Philippines, Singapore, and Thailand.

- **Member States:** The current member states include **Brunei, Cambodia, Laos, Myanmar, and Vietnam**.
- **Motto:** “One Vision, One Identity, One Community.”
- **Secretariat:** Located in Indonesia, Jakarta
- **ASEAN promotes intergovernmental cooperation and facilitates economic, political, security, military, educational, and sociocultural integration** among its members.

- **Principles:** ASEAN operates on the principles of non-interference in internal affairs, consensus-building, and mutual respect.

ASEAN Plus Six:

- **ASEAN Plus Six refers to a regional grouping that includes the ten member states of ASEAN plus six more countries**, forming a broader economic and political framework.
- **Six Partner Countries:** The six partner countries are **China, Japan, South Korea, India, Australia, and New Zealand**.
- **Purpose:** The ASEAN Plus Six framework aims to **enhance economic cooperation, trade, and diplomatic relations among the participating nations**. It fosters regional integration and stability.
- **Areas of Cooperation:** The collaboration covers various areas, including **trade agreements, investment, technology exchange, cultural ties, and diplomatic dialogues**.
- **Economic Significance:** ASEAN Plus Six represents a significant economic bloc, bringing together **some of the world's major economies**.
- **The framework provides a platform for discussions on regional economic issues and facilitates the growth of the participating countries.**

Significance of the Grouping:

- 3rd largest market globally, larger than EU and North American markets. 6th largest economy globally, 3rd in Asia.
- Free-trade agreements (FTAs) with China, Japan, South Korea, India, Australia, and New Zealand. 4th most popular global investment destination.

India's Transition from Look East Policy to Act East Policy:

- **Look East Policy (LEP):** Initiated in the 1990s for active engagement with Southeast Asian countries.
- **Reasons:** Collapse of the Soviet Union, Balance of Payment crisis. Initially focused on trade and economic linkages with ASEAN.
- **Act East Policy (AEP):** Maturity of Look East Policy with a focus on extended neighborhood in the Asia-Pacific region since 2014.

Principles: Promote economic cooperation, cultural ties, and strategic relationships.

- **Emphasis on tangible action, concrete results, deepening cooperation, and focus on North Eastern Region.**

Topic 51. INDIANS ABOARD GROUNDED CHARTER FLIGHT RETURN TO MUMBAI

Important for the subject: International Relations

Twenty-five passengers on the flight to **Nicaragua** were grounded over a **human trafficking probe**, and have chosen to request **asylum in France**.

- The passengers were heading to Nicaragua but their flight was stopped at the **Varty airport (France)** for refuelling on its journey from **Fujairah** in the **United Arab Emirates** to **Managua, Nicaragua**.
- Twenty-five passengers did not return to India, requesting asylum in France. They were transferred to a special zone in Paris' Charles de Gaulle airport for asylum-seekers.
- **New law:** A new, tougher law on immigration was recently cleared by the **French parliament**.

Benefits offered by France to asylum-seekers:

- **Generous system:** France had a generous system for asylum-seekers providing them up to 300 euros a month.
- **Housing:** Can apply for housing in the hundreds of asylum-seeker housing projects across the country
- **Cheap meals:** Cheap meals are often easily available at food banks.
- **Health:** They gets free health insurance while their application is being reviewed
- **Social security:** Foreign residents get social security benefits, which include assistance in paying rent, childcare, etc.

Key changes in the new law:

Key changes	Inference
Longer wait for non-EU migrants to get welfare:	<p>People not from European Union countries will have to show they have been in the country for 30 months to receive social welfare benefits.</p> <p>Those not working will have to wait five years.</p>

Review of medical care access:	The government will review current legislation that provides illegal residents unlimited access to government-funded medical care, reported Reuters.
Asylum-seekers can be detained:	Asylum seekers whose behaviour constitutes a threat to public order can be placed in preventive detention
Tougher citizenship rules:	Children of foreigners born in France will no longer get French citizenship automatically
Students have to make a deposit:	Foreign students requesting a student residency permit will have to make a refundable deposit to cover potential “sending back” costs, unless they have financial needs or excellent academic results.

UN Convention for Asylum Seekers:

- **Article 14:** Article 14 of the **Universal Declaration of Human Rights 1948** recognizes the **right of persons to seek asylum** from persecution in other countries.

1951 Refugee Convention and 1967 Protocol:

- **Principal of Non Refoulement:** The foundational principle of international law is non-refoulement, which holds that a refugee must not be returned to a country where they would suffer severe threats to their life or freedom.
- **Adoption:** The United Nations Convention relating to the Status of Refugees was adopted in 1951, and is the centerpiece of international refugee protection today.
- **India perspective:** India is not a party to the 1951 Refugee Convention and its 1967 Protocol, the key legal documents pertaining to refugee protection.

Places in news:

- **Varty Airport-** France
- **Fujairah** – United Arab Emirates
- **Managua**– Nicaragua.

Topic 52. TURKEY PANEL NOD TAKES SWEDEN CLOSER TO NATO MEMBERSHIP

Important for the subject: International Relations

Turkey panel nod takes Sweden closer to NATO Membership. The **Turkish parliament's foreign** affairs commission has **approved Sweden's NATO membership application** after a 19-month delay **due to security concessions demanded by Turkey**.

- The panel, controlled by President Erdogan's ruling party, supported Sweden's petition in response to Russia's invasion of Ukraine.
- The **next step involves a vote by the entire parliament**, expected to pass as the ruling party and its allies control it.
- If **approved, the bill will be sent to Erdogan for signing**, concluding a nearly two-year process.
- However, Commission Chairman Fuat Oktay downplayed expectations for a quick vote, stating that the **speaker will decide the timing**.
- Despite Turkey confirming Finland's petition in April, it held Sweden hostage until further action against **local PKK members**.
- NATO Secretary-General Jens Stoltenberg and Swedish Foreign Minister Tobias Billstrom welcomed the decision, while Turkey remains a potential obstacle to Sweden's NATO membership.

What is the NATO membership — Process

- NATO has what it calls an **"open door policy" on new members** — any **European country can request to join**, so long as they meet certain criteria and all existing members agree. A country **does not technically "apply" to join**;
- **Article 10 of its founding treaty** states that, **once a nation has expressed interest, the existing member states "may, by unanimous agreement, invite any other European State in a position to further the principles of this Treaty ... to accede."**
- Ratification of new members could take a year, as **the legislatures of all 30 current members must approve new applicants**.

Requirements for membership, which include

- having a **functioning democratic political system** based on a market economy;
- **treating minority populations fairly**;
- committing to **resolve conflicts peacefully**;
- the ability and willingness to make a **military contribution to NATO operations**;

- Committing to **democratic civil-military relations** and institutions.

What does NATO membership entail?

- The reason most countries join NATO is because of **Article 5 of the North Atlantic Treaty**, which stipulates that **all signatories consider an attack on one an attack against all**.
- **Article 5** guarantees that the **resources of the whole alliance — including the massive US military — can be used to protect any single member nation**, such as smaller countries who would be defenseless without their allies. Iceland, for example, has no standing army.

Topic 53. INDIA, RUSSIA-LED EURASIAN BLOC TO BEGIN NEGOTIATIONS ON FTA SOON

Important for the subject: International Relations

India, Russia-led Eurasian bloc to begin negotiations on FTA soon. **India and the Eurasian Economic Union (EaEU)**, led by Russia, are poised to **initiate negotiations on a free trade agreement (FTA)** aimed at bolstering India's exports to the region, particularly in engineering goods, electronics, and agriculture.

- During a **meeting in Moscow**, **External Affairs Minister S Jaishankar** and Russian Deputy Prime Minister Denis Manturov discussed enhancing India's engagement with the Russian Far East and affirmed plans for FTA negotiations.
- **Discussions on the FTA** between India and the **EaEU, comprising Russia, Kazakhstan, Belarus, Armenia, and Kyrgyzstan**, began in early 2020 but were delayed due to the Covid-19 pandemic.
- Despite recent resumed talks, negotiations are still pending.

Some facts about Eurasian Economic Union (EaEU):

- The Eurasian Economic Union (EEU) is an economic **union of states located primarily in Northern Eurasia**.
- The Eurasian Economic Union consists of **five member states : Russia, Belarus, Kazakhstan, Kyrgyzstan, and Armenia**
- The EEU aims to **optimize the flow of goods and services** among its **member nations by coordinating policies** and regulations, thereby creating a single economic space.

Topic 54. WHY MORE INDIANS SEEM TO BE TRAVELLING TO NICARAGUA

Important for the subject: International Relations

Interest in **traveling to Nicaragua** has surged in India, leading to **increased queries about visas**. A recent incident involved a **Nicaragua-bound chartered flight** from the **UAE with**

303 Indian passengers detained in France on suspicion of 'human trafficking.'

- The **Airbus A340** made a **technical stop in Vatry, France**, where an anonymous tip prompted concerns.
- The flight **returned to Mumbai**, but **25 passengers sought asylum in France**, highlighting a notable rise in Indian interest and travel to Nicaragua.

Why have cases of Indians seeking to travel to Nicaragua led to some concerns

- Increased **interest in traveling to Nicaragua** from India has **raised concerns about potential misuse** as a route for **illegal entry into the United States and Canada**.
- US Customs and Border Patrol data reveals a significant rise, with **96,917 Indians arrested for attempting illegal entry** into the US in the fiscal year 2023, marking a **51.61% increase**.
- While some travelers **may have legitimate reasons**, the surge in inquiries, especially from individuals with **limited international travel history**, has led to suspicions. Notably, a large number of queries are coming from **Punjab, followed by Gujarat**.

Is the process for obtaining a visa from Nicaragua easy

- Obtaining a **visa for Nicaragua** can be **challenging** for Indian passport holders due to a **lack of clarity and an absence of a Nicaraguan embassy in India**.
- The country **only has an honorary consul general in India, Vivek Burman of the Dabur group**, whose office **lacks the authority to issue visas** or authenticate related documents.
- While **Indian passport holders are technically eligible for a visa on arrival in Nicaragua**, the unclear policy and **lack of information in the public domain** contribute to **confusion in the application process**.

How do Indians reach Nicaragua

- **Indians with valid visas for the US, Canada, and Schengen countries** can reportedly **reach Nicaragua** and obtain a **visa on arrival by paying the necessary fee**.
- However, those **without valid visas** to these countries are **advised to apply for travel authorization** directly with the Nicaraguan Ministry of the Interior.
- **Travel agents recommend even those with valid visas to apply for advance travel authorization** due to potential complications in Nicaragua's immigration procedure, **language barriers (Spanish being prevalent)**, and **limited familiarity** with regulations for Indian citizens.
- The **honorary consul general's office in India** directs **travelers to contact the Nicaraguan Ministry of the Interior** for further information on the visa on arrival

process.

Some facts about Nicaragua:

- The Republic of Nicaragua is the **largest country in Central America**, bordered by **Honduras to the north**, the **Caribbean to the east**, **Costa Rica to the south**, and the **Pacific Ocean to the west**.
- **Managua** is the **country's capital** and largest city.

Topic 55. TELECOM ACT DOESN'T GIVE POWER TO BREAK ENCRYPTION

Important for the subject: International Relations

Telecom act doesn't give power to break encryption. The **new Telecom Act** in India **does not grant the government** or service providers the **authority to break encryption** or intercept messages on **over-the-top (OTT) platforms**, according to Ashwini Vaishnaw, the Minister of Communications and Information Technology.

- Addressing **concerns about the vague definition of telecom service**, Vaishnaw emphasized that the **government lacks the power to request service providers to break encryption or intercept messages**, and its **authority is limited to blocking** fraudulent numbers.
- He clarified that **OTTs are not regulated** by the **Telecom Act**, which **aims to bring structural reforms** and **introduces principles** for spectrum allocation and dealing with insolvent telcos.

Some facts About Telecommunications Bill, 2023:

The Telecommunications Bill, 2023 amends and consolidates the laws relating to:

- **development, expansion and operation of telecommunication services and telecommunication networks; Assignment of spectrum; and for matters connected therewith.**
- The new Bill seeks to **replace the Indian Telegraph Act, 1885, the Indian Wireless Telegraphy Act, 1933, and the Telegraph Wires (Unlawful Possession) Act, 1950.**

Some Key Features of Telecommunications Bill, 2023

Authorization for Telecom Activities:

- **Central government approval required** for telecommunication services, network operations, and radio equipment possession.
- **Spectrum allocation through auction, except for specific purposes** like national security, disaster management, and satellite services.

Interception and Search Powers:

- **Messages may be intercepted or blocked** for public safety or emergencies. **Telecom**

services may be suspended under similar grounds.

- **Authorized officers can search premises or vehicles for unauthorized telecom equipment.**

User Protection Measures:

- **Central government is empowered to implement user protection measures. Measures include prior consent for specified messages, creation of “Do Not Disturb” registers, and a mechanism for reporting malware.**

Right of Way for Telecom Infrastructure:

- **Entities laying telecom infrastructure can seek right of way over public or private property.**
- **Right of way provided on a non-discriminatory and non-exclusive basis to the extent possible.**

TRAI Appointments Amendment:

- **Amendments to the TRAI Act allow individuals with at least 30 years of professional experience to serve as Chairperson and 25 years for members.**

Digital Bharat Nidhi:

- **Universal Service Obligation Fund renamed Digital Bharat Nidhi.**
- **Fund usage expanded to include research and development in telecom.**

Offences and Penalties:

Criminal and civil offences specified in the Bill.

- **Providing unauthorized telecom services or breaching terms incurs penalties, including imprisonment and fines.**

Adjudication Process:

- **Central government appoints adjudicating officers for civil offences.**
- **Officers must hold the rank of joint secretary or above.**

Topic 56. US ALLIES RELUCTANT ON RED SEA TASK FORCE

Important for the subject: International Relations

The U.S. initiated **Operation Prosperity Guardian** to safeguard **Red Sea** shipping from Houthi attacks. While the **Pentagon claims over 20 nations** are part of the defensive coalition, some allies, **like Italy and Spain, seem reluctant** to associate publicly.

- **The conflict’s backdrop includes tensions over Israel’s Gaza offensive.**

- Houthi attacks on commercial ships **prompted Maersk to reroute vessels.**
- **Notable absentees from the coalition include China.**
- The new initiative will be **coordinated by the existing Combined Task Force 153, established in April 2022** to enhance maritime security in the region.

What is Combined Task Force 153:

- **Combined Task Force 153 (CTF 153)** is a task force that focuses on maritime security and capacity building **in the Red Sea, Bab al-Mandeb, and Gulf of Aden.**
- It was **established on April 17, 2022**, and is one of **five task forces** operated by the **Combined Maritime Forces (CMF)**

Topic 57. JAVIER MILEI WRITES TO BRICS LEADERS, REJECTS INVITE FOR ARGENTINA TO JOIN THE GROUPING

Important for the subject: International Relations

Argentina's President, **Javier Milei**, has **formally rejected an invitation to join the BRICS grouping**, comprising Brazil, Russia, India, China, and South Africa.

- In letters sent to BRICS leaders, Milei stated that **Argentina's membership was "not considered appropriate at this time."**
- He had pledged not to join BRICS during his campaign, **expressing alignment with the United States and Israel.** Despite taking a **more conciliatory tone since taking office**, Milei's letters indicate a **reassessment of foreign policy decisions** made by the previous administration.

Some facts about BRICS:

- BRICS is an **acronym** for the **grouping of the world's leading emerging economies**, namely **Brazil, Russia, India, China, and South Africa.**
- In **2001**, the British Economist **Jim O'Neill** coined the **term BRIC** to describe the **four emerging economies of Brazil, Russia, India, and China.**
- The grouping was **formalized** during the **first meeting of BRIC Foreign Ministers' in South Africa** was invited to join BRIC in **December 2010**, after which the group adopted the acronym BRICS
- **Egypt, Ethiopia, Iran, Saudi Arabia and the United Arab Emirates** are set to join the group with effect from **January 1, 2024.**

Topic 58. CHINA BANS EXPORT OF RARE EARTH TECHNOLOGIES

Important for the subject: Geography

China, the world's top processor of rare earths, banned the export of **technology to extract and separate the strategic metals**, as it overhauled a list of technologies deemed **key to national security**.

It also banned the **export of production technology** for **rare earth metals** and alloy materials as well as **technology to prepare some rare earth magnets**.

The move comes as **Europe** and **the U.S.** scramble to wean themselves off rare earths from **China**, which **accounts for 90% of global refined output**. **Top 5 REE producing countries:** China, the USA, Australia, Myanmar and Thailand.

Rare Earth Elements (REE):

- These are a set of **17** chemical elements in the periodic table, specifically the **15 lanthanides plus scandium (Atomic Number 21) and Yttrium (Atomic Number 39)**.
- The **Lanthanide series** comprises the 15 metallic chemical elements with atomic numbers 57 through 71, from lanthanum through lutetium.
- Scandium and yttrium are considered rare-earth elements because they tend to occur in the same ore deposits as the lanthanides and exhibit similar chemical properties, but have different electronic and magnetic properties.
- **Cerium (AN 58)** is the most abundant rare earth metal. Their colour ranges from Shiny Silver to Iron Gray. They are soft, malleable, ductile and usually reactive, especially at elevated temperatures or when finely divided.
- Its **application** ranges from Civilian (smartphones, laptops, petroleum refining catalysts) to military including nuclear applications. Rare minerals that are essential to electric vehicles, wind turbines and drones.
- **China** has the **largest reserve (37 percent)**, followed by **Brazil** and **Vietnam** (18 percent each), **Russia** (15 percent), and the remaining countries (12 percent). **Deng Xiaoping** once said, The Middle East has oil and China has rare earth.

Why are these elements called RARE?

- There is no shortage of rare earths. But their extraction is difficult (Requires high skill, Capital intensive, Environmental issues).

Topic 59. ASSAM-MEGHALAYA PANELS ON BOUNDARY DISPUTE TO SUBMIT REPORTS BY DEC. 31***Important for the subject: Geography***

The regional committees on the boundary dispute between Assam and Meghalaya have been asked to submit their reports by December 31, a Meghalaya government official said.

What is Assam-Meghalaya Border Dispute?

- Assam and Meghalaya have a longstanding dispute in 12 stretches of their 884-km shared border.
- The Assam-Meghalaya border dispute are the areas of Upper Tarabari, Gazang reserve forest, Hahim, Langpih, Borduar, Boklapara, Nongwah, Matamur, Khanapara-Pilangkata, Deshdemoreah Block I and Block II, Khanduli and Retacherra.

History:

- During **British rule**, undivided Assam included present-day Nagaland, Arunachal Pradesh, Meghalaya and Mizoram.
- **Meghalaya was carved out in 1972**, its boundaries demarcated as per the Assam Reorganisation (Meghalaya) Act of 1969, but has held a different interpretation of the border since.
- In 2011, the Meghalaya government had identified 12 areas of difference with Assam, spread over approximately 2,700 sq km.

Major Point of Concern:

- A major point of contention between Assam and Meghalaya is the **district of Langpih in West Garo Hills** bordering the Kamrup district of Assam.
- Langpih was part of the Kamrup district during the British colonial period but post-Independence, it became part of the Garo Hills and Meghalaya. Assam considers it to be part of the Mikir Hills in Assam.
- Meghalaya has questioned Blocks I and II of the Mikir Hills -now Karbi Anglong region – being part of Assam. Meghalaya says these were parts of erstwhile United Khasi and Jaintia Hills districts.

Attempts to Resolve Dispute:

- In **1985**, under the Assam chief minister and Meghalaya chief minister, an **official committee was constituted under the former Chief Justice of India Y V**

Chandrachud.

- However, a solution was not found. Both state governments identified six out of 12 disputed areas for resolution in the first phase.
- Out of 36.79 sq km of disputed area taken up for settlement in the first phase, Assam would get full control of 18.46 sq km and Meghalaya of 18.33 sq km.
- In March 2022, a Memorandum of Understanding was signed based on these recommendations.
- The **second round of discussions for the remaining six areas commenced** from the end of November 2022.

What Additional Can be done to Resolve the Dispute?

- Boundary disputes between the states can be **settled by using satellite mapping** of the actual border locations.
- Under **Article 263 of the Constitution, the Inter-state council is expected to inquire and advise on disputes**, discuss Important for the subjects common to all states and make recommendations for better policy coordination.
- Similarly, **Zonal councils** need to be revived to discuss the matters of common concern to states in each zone—matters relating to social and economic planning, border disputes, inter-state transport, etc.
- India is the epitome of **unity in diversity**. However, in order to strengthen this unity furthermore, both the centre and state governments, need to imbibe the ethos of cooperative federalism.

Topic 60. EL NINO EFFECT: CASES OF DENGUE HAVE INCREASED GLOBALLY

Important for the subject: Geography

The World Health Organization (WHO) reported a staggering ten-fold increase in dengue cases globally between 2000 and 2019, rising from 500,000 to 5.2 million reported cases. However, this count likely underestimates the actual prevalence due to many cases being asymptomatic and the disease not being notifiable in numerous countries.

Following a decline during the pandemic years (2020-2022), there was a sharp resurgence in global dengue cases in 2023. Over **5 million** cases and more than 5,000 deaths were reported across 80 countries. The North and South America bore the brunt, with 4.1 million suspected cases, notably impacting Brazil, Peru, and Mexico.

- In 2023, the upsurge can be linked to the changing distribution of the vectors (chiefly *Aedes aegypti* and *Aedes albopictus*); increase in temperature and changes in rainfall patterns due to the El Nino climate

phenomenon; fragile health systems after the pandemic, political and financial instabilities in countries; and high population movements.

Global spread:

- **Southeast Asia** witnessed a notable surge, particularly in **Bangladesh** and **Thailand**. In **Africa**, 171,991 cases were reported, with **Burkina Faso** facing the most severe impact.
- The **Eastern Mediterranean** saw **dengue spreading to nine countries**, notably affecting **Pakistan, Saudi Arabia, and Oman**. In the **European Region**, **dengue**, once mainly travel-related, has established itself since **2010**, with cases reported in **Italy, France, and Spain**.
- The **Western Pacific Region** reported over **500,000 cases** and **750 deaths**, primarily affecting the **Philippines, Vietnam, and Fiji**.
- To address outbreaks, a **Global Joint Incident Management Support Team** was established, combining **WHO Health Emergencies Programme** departments and expertise from the **neglected tropical disease department**.
- **Dengue transmission** involves **four serotypes of the virus (DENV-1, DENV-2, DENV-3, DENV-4)**, contributing to cyclic outbreaks occurring every 3-4 years.

About Dengue:

- It is caused by the **dengue virus (DENV)**.
- It is **transmitted to humans** through the **bites of infected female mosquitoes**, primarily the **Aedes aegypti mosquito**.
- The severe form of **dengue fever**, also called **dengue hemorrhagic fever**, can cause **serious bleeding, a sudden drop in blood pressure (shock)** and **death**. It is more **common in tropical and subtropical climates**.
- **Symptoms:** The most common symptoms are high fever, headache, body aches, nausea and rash. Most will also get better in 1–2 weeks but in severe cases it can be fatal.

Treatment:

- There is no specific treatment for dengue.
- Early detection of disease progression associated with severe dengue, and access to proper medical care lowers fatality rates of severe dengue to below 1%.
- The dengue vaccine **CYD-TDV** or **Dengvaxia** was approved by the **US Food & Drug Administration** in 2019, the first dengue vaccine to get the regulatory nod in the US.

Topic 61. REVANTH GOVT. PLANS AN ONSITE 'EXPOSE' INTO TELANGANA'S KALESHWARAM PROJECT***Important for the subject: Geography***

The Kaleshwaram Lift Irrigation Scheme of Telangana is a multi-purpose irrigation project on the **Godavari River** in Kaleshwaram, Bhupalpally in Telangana. The project starts at the **confluence point of Pranahita River and Godavari River**.

- Originally called Pranahita-Chevella project in erstwhile Andhra Pradesh, it was redesigned, extended and renamed as Kaleshwaram project in Telangana in 2014.
- The project will also support Mission Kakatiya and Mission Bhagiratha schemes of telangana designed to provide drinking water to many villages and improve the capacities of tanks.

Additional Information:**Godavari River**

- The Godavari is India's second longest river after the Ganga.
- Source: Trimbakeshwar, Maharashtra.
- Areas drained: It flows east for 1,465 kilometres, draining the states of Maharashtra, Telangana, Andhra Pradesh, Chhattisgarh, Odisha, and Karnataka, ultimately emptying into the Bay of Bengal through its extensive network of tributaries.
- Tributaries: The major tributaries of the river are classified as the left bank tributaries which include the Purna, Pranhita, Indravati and Sabari River and the right bank tributaries are Pravara, Manjira, Manair.
- Kumbh Mela is held at Nasik (on the Godavari), Prayagraj (at the confluence of Ganga, Yamuna, and the mythical Saraswati), Haridwar (on the Ganges), and Ujjain (on the Shipra) every four years by rotation.
- Sadarmatt Anicut across river Godavari is one among the two irrigation projects in the International Commission on Irrigation and Drainage (ICID) Register of Heritage Irrigation Structures.

Pranahita River

- Pranahita River is the largest tributary of the Godavari river covering about 34% of its drainage basin.
- It is a confluence of various other smaller tributaries like Wardha, Penganga and Wainganga Rivers

Topic 62. GLOBAL 2024 STAPLE FOOD SUPPLIES TO BE STRAINED BY DRY WEATHER, EXPORT CURBS

Important for the subject: Geography

High food prices in recent years have prompted farmers worldwide to plant more **cereals and oilseeds**, but consumers are set to face **tighter supplies well into 2024**, amid adverse **El Nino weather, export restrictions** and **higher biofuel mandates**.

Price Trends:

- **Wheat, corn, and soybean prices** are predicted to **decline in 2023** after several years of growth. Factors include **eased Black Sea bottlenecks** and concerns about a potential **global recession**.
- **El Nino forecasts** and **unexpected large purchases by China** contribute to ongoing concerns.

El Nino Impact on Food Production:

- **El Nino's dryness** affects **rice, wheat, and palm oil supplies**.
- **Reduced reservoir levels** and **dry planting conditions** may decrease **Asian rice production** in 2024.

India's Wheat Situation:

- **Insufficient moisture** threatens **India's next wheat crop**, potentially leading to its **first wheat imports** in six years.
- India has already imposed restrictions due to decreased rice production.

Australian Crop Challenges:

- **Dry soil conditions in Australia** might impact **upcoming wheat planting** due to previous intense **heat affecting crop yields**.

South American Crop Outlook:

- **Argentina** expects favourable conditions for **soybeans, corn, and wheat** due to abundant rainfall.
- **Brazil** anticipates **near-record farm output** but faces uncertainties in **soybean and corn production** due to recent **dry weather**.

Global Palm Oil Production:

- **El Nino** is expected to **decrease global palm oil production**, impacting **cooking oil prices** that dropped significantly in 2023.

Topic 63. INDIA EYES \$1 BILLION IN BANANA EXPORTS IN NEXT FIVE YEARS***Important for the subject: Geography***

With the successfully export of a trial shipment of fresh bananas to the **Netherlands through sea route**, India is now aiming at increasing the exports of this fruit to \$1 billion in the next five years.

India is world's largest banana producer. Despite it, India's global export share is just 1%, though the country accounts for 26.5% of the world's production.

About Banana**Agro-climatic requirements:**

- Banana, basically a **tropical crop**, grows well in a temperature range of 15°C – 35°C with relative humidity of 75-85%.
- Deep, rich loamy soil with **pH between 6.5–7.5** is most preferred for banana cultivation. Saline solid, **calcareous soils** are not suitable for banana cultivation. There are some **12-15 varieties of bananas** in India.
- Largely in the peninsular southern coastal region, namely in parts of Gujarat, Maharashtra, Karnataka, Kerala, Tamil Nadu, Telangana, Andhra Pradesh, Odisha, and Bengal, and in the Northeastern areas of the country such as Assam and Arunachal Pradesh.
- The central and northern regions – Madhya Pradesh, Uttar Pradesh, Haryana, and Punjab also grow the plant but neither in such variety nor in numbers.
- **India produces about 29 million tonne of banana every year, and next is China with 11 million.**

Nutritive value

- Bananas have 10-20 mg of calcium, 36 mg of sodium, 34 mg of magnesium and 30-50 mg of phosphorous per 100 g of edible material. All these make **bananas highly nutritious**.
- Its peel is of use as a '**biochar**,' which is used both as a fertilizer and to generate electricity.
- **Biochar is a charcoal-like substance that's made by burning organic material** from agricultural and forestry wastes (also called biomass) in a controlled process called **pyrolysis**.
- **Pyrolysis is the heating of an organic material**, such as biomass, **in the absence of oxygen**.

Topic 64. INDIA'S STATIONARY COURSE IN THE SHIPPING VALUE CHAIN

Important for the subject: Geography

Yangtze river:

The **Yangtze, Yangzi or Changjiang** is the **longest river in Eurasia**, the **third-longest in the world**, and the **longest in the world to flow entirely within one country**.

- It rises at **Jari Hill** in the **Tanggula Mountains** of the **Tibetan Plateau** and flows 6,300 km (3,915 mi) in a generally **easterly direction** to the **East China Sea**.
- It is the **fifth-largest primary river** by discharge volume in the world. Its drainage basin comprises **one-fifth of the land area of China** and is home to nearly **one-third of the country's population**.
- The prosperous **Yangtze Delta** generates as much as **20% of China's GDP**. The **Three Gorges Dam** on the **Yangtze** is the **largest hydroelectric power station** in the world that is in use.
- Merchant ships navigate the river, importing raw materials and exporting finished products globally.

India and China's maritime histories:

- **Indian seafarers** were prominent globally due to English proficiency and labour arbitrage. Indians excelled in **ship management**, contributing billions in **foreign exchange** yearly.
- However, **India lagged in ship owning, chartering, financing, and shipbuilding**. **State-owned Indian shipyards** suffered, impacting India's shipbuilding capacity.
- **China**, propelled by government initiatives, became a **dominant force in global shipbuilding by 2020**.
- **India's Maritime Agenda 2020** aimed for a modest increase in shipbuilding, but India's share dropped instead. The **Maritime India Vision (MIV) 2030** lacked a plan for shipbuilding and ownership.
- **Shipbuilding** could strengthen **India's manufacturing capacity, strategic power, and global presence**. **Shipbuilding** plays a vital role in **military strength** and **international trade**.

What is MIV 2030?

- To develop global standard ports in India, the **Ministry of Ports, Shipping and Waterways** under the **MIV 2030** has identified initiatives such as
- Developing world-class Mega Ports, Transshipment hubs and Infrastructure modernization

of ports.

- It estimates the investments to the tune of **1,00,000-1,25,000 crore** for capacity augmentation and development of world-class infrastructure at Indian Ports.

Indian Shipping Industry:

- India has a coastline of more than **7,517 kilometres**, interspersed with more than **200 ports**, and most cargo ships that sail between **East Asia, America, Europe, and Africa** pass through **Indian territorial waters**.
- So, the shipping industry is a vital part of the Indian economy. In **1941, India's first shipbuilding factory** was established in **Visakhapatnam**. In **1952**, the Indian government adopted it and renamed it '**Hindustan Shipyard Limited**.'
- The **Shipping Corporation of India Ltd. (SCI)** was established in **1961** and changed from a private limited company to a public limited company in **1992**. It was given the status of '**Navratna**' in August **2009**.
- According to the **Ministry of Shipping**, maritime transport accounts for approximately **95 per cent** of India's trading volume and **70 per cent** of its trading value.
- **India** is also one of the top five ship recycling countries globally, with a **30%** share of the global ship recycling market.
- The largest major container handling port in India is the **Jawaharlal Nehru Port Trust (JNPT)** in Maharashtra, while the largest private port in India is **Mundra** in Gujarat.

Topic 65. BULK CARRIER HITS MINE IN BLACK SEA, TWO PERSONS INJURED

Important for the subject: Geography

A **Panama**-flagged bulk carrier, headed to a **River Danube port** to load grain, has hit a mine in the **Black Sea** injuring two persons.

- It was the latest incident of a civilian vessel hitting an explosive in the **Black Sea**.

Black Sea:

- It is a **marginal sea** of the **Atlantic Ocean** lying between **Europe** and **Asia**. It is bordered by **Bulgaria, Georgia, Romania, Russia, Turkey, and Ukraine**.
- It is supplied by **major rivers**, principally the **Danube, Dnieper, and Don**. The Black Sea ultimately drains into the **Mediterranean Sea**, via the **Turkish Straits** and the **Aegean Sea**.
- The **Bosporus Strait** connects it to the small **Sea of Marmara** which in turn is connected to the **Aegean Sea** via the **Strait of the Dardanelles**. To the **north**, the **Black Sea** is

connected to the **Sea of Azov** by the **Kerch Strait**.

- The **Black Sea** covers 436,400 km² (not including the Sea of Azov), making it the **world's largest inland body of water**.

Panama:

- It is a **transcontinental country** in **Central America**, spanning the **southern tip of North America** into the **northern part of South America**.
- It is bordered by **Costa Rica** to the **west**, **Colombia** to the **southeast**, the **Caribbean Sea** to the **north**, and the **Pacific Ocean** to the **south**.
- **Isthmus of Panama:** Also called the **Isthmus of Darien**, is the narrow strip of land that lies between the **Caribbean Sea** and the **Pacific Ocean**, linking **North and South America**.
- The **Panama Canal** is an **artificial 82-kilometre (51-mile) waterway** in **Panama** that connects the **Atlantic Ocean** with the **Pacific Ocean**, cutting across the **Isthmus of Panama**, and is a conduit for maritime trade.
- **Placing stone crushers in the 'green' category will create a huge environmental mess**

Stone Crusher Units:

- A **stone crushing plant** typically works by **crushing large stones into smaller pieces**. The crushed stones are then transported through a conveyor belt to a storage area, where they are screened, separated, and sorted according to size and other criteria.
- In **July 2023**, the **Central Pollution Control Board (CPCB)** proposed a new draft of classification criteria for industries into the **red, orange, green and white categories**. The **stone crusher units** are currently categorised into the **'orange category'**.
- Stone crusher units are **source of fugitive emissions, total suspended particles (TSP) and fine particulate matter (PM) 10, and ultrafine PM2.5**.
- **Health impact:** Environmental pollution by stone crushing units affected **36 per cent workers with diseases** like eye irritation, asthma, chest pain, tuberculosis, etc.
- **Noise pollution** from the operation of the crusher units is another cause for concern.

fugitive emissions:

- Fugitive emissions are **leaks and other irregular releases of gasses or vapours** from a **pressurized containment** – such as **appliances, storage tanks, pipelines, wells, or other pieces of equipment** – mostly from **industrial activities**.
- In addition to the economic cost of lost commodities, fugitive emissions contribute to **local air pollution** and may cause further environmental harm. Common industrial

gases include refrigerants and natural gas, while less common examples are **per fluorocarbons**, **sulfur hexafluoride**, and **nitrogen trifluoride**.

- Most occurrences of fugitive emissions are **small**, of **no immediate impact**, and **difficult to detect**.

Topic 66. HISTORY OF METROLOGICAL SERVICES IN INDIA

Important for the subject: Geography

Historical perspective:

Meteorology in India dates back to ancient times with discussions on **cloud formation**, **rain processes**, and **seasonal cycles** found in **philosophical writings** like the **Upanishadas**.

- **Varahamihira's Brihatsamhita** and **Kautilya's Arthashastra** show early scientific knowledge about **atmospheric processes** and **rainfall measurement's relevance to agriculture**.
- **Kalidasa** in his epic, '**Meghdoot**', written around the seventh century, even mentions the date of onset of the monsoon over central India and traces the path of the monsoon clouds.
- The **17th century** marked meteorology's scientific foundation with inventions like the **thermometer** and **barometer**. **Halley's treatise** (a **British scientist**) in **1636** attributed the **Indian summer monsoon** to **seasonal wind reversals**.

Modern meteorology in India:

- **India** boasts some of the **world's oldest meteorological observatories**, established by the **British East India Company** in **Calcutta** and **Madras** in the **late 18th century**.
- The **Asiatic Society of Bengal (1784)** and **Bombay (1804)** encouraged **meteorological studies**.
- **Captain Harry Piddington's** work introduced the term "**cyclone**" and detailed **tropical storms** in the **19th century**. In **1842** he published his monumental work on the "**Laws of the Storms**".

Indian Meteorological Department (IMD):

- The **IMD** was **established in 1875** after calamitous events like **cyclones** and **monsoon failures**, appointing **H. F. Blanford** as the **first Meteorological Reporter**. The **first Director General of Observatories** was **Sir John Eliot** who was appointed in **May 1889** at **Calcutta headquarters**.
- The headquarters of **IMD** were later shifted to **Shimla**, then to **Poona** (now **Pune**) and finally to **New Delhi**.

- The **IMD** has expanded its **infrastructure** and scientific growth since its modest beginnings, embracing contemporary technology like telegraphs, computers, and geostationary satellites (INSAT).
- It's been a pioneer in meteorology and atmospheric science, fostering growth for 140 years, and stands at the cusp of an exciting future.
- **IMD is the National Meteorological Service of the country and the principal government agency in all matters relating to meteorology and allied Important for the subjects. Its mandate:**
- To take meteorological observations and to provide current and forecast meteorological information for optimum operation of weather-sensitive activities like agriculture, irrigation, shipping, aviation, offshore oil explorations, etc.
- To warn against severe weather phenomena like tropical cyclones, norwesters, dust storms, heavy rains and snow, cold and heat waves, etc., which cause destruction of life and property.
- To provide meteorological statistics required for agriculture, water resource management, industries, oil exploration and other nation-building activities. To conduct and promote research in meteorology and allied disciplines.

Topic 67. HEAVY RAINFALL IN THOOTHUKUDI CAUSES SEVERE DAMAGE TO SALT STOCK WORTH ₹100 CRORE

Important for the subject: Geography

Nearly 6 lakh tonnes of **salt ₹100 crore** worth has been washed away in the **coastal district of Thoothukudi** due to the unprecedented rainfall witnessed on December 17 and 18. The **salt** were ready to be despatched to various clients in India and abroad.

Salt Industry in India:

- **India** is the **third largest Salt producing Country** in the World after **China** and **USA** with **Global annual production** being about **230 million tonnes**.
- When **India** attained Independence in **1947**, salt was being **imported** from the **United Kingdom & Adens** to meet its domestic requirement.

The main sources of salt in India are:

1. Sea brine
2. Lake brine
3. Sub-soil brine and
4. Rock salt deposits

Major Salt Producing Centers:

- Sea water is an **inexhaustible** source of salt.
- The **major salt producing centres** are **Marine Salt works** along the coast of **Gujarat** (Jamnagar, Mithapur, Jhakhar, Chira, Bhavnagar, Rajula, Dahej, Gandhidham, Kandla, Maliya, Lavanpur), **Tamil Nadu** (Tuticorin, Vedaranyam, Covelong), **Andhra Pradesh** (Chinnaganjam, Iskapalli, Krishnapatnam, Kakinada & Naupada), **Maharashtra** (Bhandup, Bhayandar, Palghar), **Orissa** (Ganjam, Sumadi) and **West Bengal** (Contai).
- **Inland Salt Works** in **Rajasthan** using lake brine and sub-soil brine viz. **Sambhar Lake, Nawa, Rajas, Kuchhaman, Sujangarh and Phalodi Rock Salt Deposits** at **Mandi** in the **State of Himachal Pradesh**.

Top 5 Largest Salt Production States of India:

- Major salt producing states of India are **Gujarat, Rajasthan, Tamil Nadu, Maharashtra, Andhra Pradesh, Karnataka and Odisha**.

Government of Indias Role in Development of Salt Industry:

- **Salt** is a **Central Important for the subject** in the **Constitution of India** and appears as item **No.58** of the **Union List** of the **7th Schedule**, which reads:
- Manufacture, Supply and Distribution of Salt by Union Agencies; and Regulation and control of manufacture, supply and distribution of salt by other agencies. **Central Government** is responsible for controlling all aspects of the Salt Industry.
- **Salt Commissioners Organisation**, an attached Office under the **Ministry of Commerce & Industry** (Department of Industrial Policy & Promotion), Government of India, is entrusted with the above task. **Government of India** has **delicensed Salt Industry** in 1996-97.

Topic 68. INDIA CLOSING IN ON LITHIUM DEAL WITH ARGENTINA, TAPPING AUSTRALIA AND CHILE TOO

Important for the subject: Geography

The **Mines Ministry**, through the **state-owned Khanij Bidesh India Ltd (KABIL)**, has entered into a **draft exploration and development agreement** with **Argentinan miner CAMYEN** for possible acquisition and development of five-odd **lithium blocks**.

- It has also entered into a **non-disclosure agreement** with **Australia and Chile** for **lithium** exploration.

- **Chile and Argentina** account for **30–35 per cent** of the world's supplies of **lithium**. **Chile**, which has **11 per cent** of the world's **lithium reserves**, supplies **26 per cent** of the requirements; while **Argentina** with nearly **one-fifth of the global resources** supplies about **6 per cent**.

Lithium Triangle:

- The **Lithium Triangle** is a **region** of the **Andes** that is **rich in lithium reserves**, encompassed by the borders of **Argentina, Bolivia, and Chile**.
- The **lithium** in the triangle is concentrated in various **salt pans** that exist along the **Atacama Desert** and neighbouring arid areas, the largest areas of three main salt pans that define its vertex (**Salar de Uyuni** in **Bolivia**, **Salar de Atacama** in **Chile**, and **Salar del Hombre Muerto** in **Argentina**).
- **Salar de Atacama** in **Chile** has the **highest concentration** of **lithium** (0.15% by weight) among all the **world's brine sources**.

Kabil (Khanij Bidesh India Limited):

- A **Joint Venture Company** among **NALCO, HCL and MECL** named **Khanij Bidesh India Limited (KABIL)** was formed in **August 2019**.
- The target of this company is to **identify, acquire, develop, process and make commercial use of strategic minerals** in **overseas locations** for supply in **India**.
- **KABIL** is focusing on **identifying and sourcing battery minerals** like **Lithium and Cobalt**.

Topic 69. COURTS SHOULD NOT STRAY FROM THE CONSTITUTIONAL VISION OF SECULARISM

Important for the subject: Polity

As an alternate view for the court's *Gyanvapi* case judgment, there is a thought that Courts should not stray from the constitutional vision of secularism.

Allahabad High Court's Controversial Ruling

- **Legal Challenge Validated:** Allahabad High Court permits suits from 1991 to declare part of *Gyanvapi Mosque* property of Lord *Vishweshwar*.
- **Controversial Interpretation:** Court claims the *Places of Worship Act* is not applicable until the "religious character" is determined.
- **Potential for Communal Tension:** The ruling may expedite the conversion of a mosque into a temple, fueling societal tension.

Discrepancies in Judicial Treatment

- **Divergent Treatment:** Contrasts treatment of 2022 suits by women worshippers, focused on worship rights, with 1991 suits seeking mosque conversion.
- **Inconsistent Interpretation:** Despite explicit mosque-related relief sought in 1991 suits, the court deems them maintainable, raising concerns.
- **Survey Controversy:** ASI survey ordered for 2022 suits to decide 1991 suits, fostering ambiguity and potential for further disputes.

Constitutional Vision

- **Judiciary's Constitutional Role:** The judiciary must prioritize secularism and resist legitimizing attempts to change worship places' status.
- **National Importance Claim:** The High Court's claim of "vital national importance" raises eyebrows; judiciary should focus on impartial adjudication.
- **Enforcement of Legal Bar:** Upholding the statutory Places of Worship Act is crucial to prevent altering the status of religious sites.

Topic 70. CRITERIA FOR AWARDED DISASTER RELIEF MUST LAID DOWN CLEARLY

Important for the subject: Polity

The recent spat between the Central and Tamil Nadu governments over flood relief after two spells of heavy rainfall in the State has been disheartening for those struggling to rebuild their lives.

- The central government does not declare any natural disaster a **national disaster**. It is only after an assessment by its team that any natural disaster is classified as a **disaster of severe nature** — as seen in the 2013 floods in Uttarakhand and 2018 floods in Kerala.
- In such a case, **there is additional financial assistance** from the National Disaster Response Fund (NDRF). The central government should ensure clear guidelines when it comes to relief.

Various Funds for mitigation of Disaster:

Prime Minister's National Relief Fund (PMNRF):

- The Prime Minister's National Relief Fund (PMNRF) was set up in January 1948, **originally to accept public contributions for the assistance of Partition refugees**.
- It is now used to provide **immediate relief to the families of those killed in natural calamities and the victims of major accidents and riots and support medical expenses** for acid attack victims and others.
- The PMNRF was originally **managed by a committee which included the Prime**

Minister and his deputy, the Finance Minister, the Congress President, a representative of the Tata Trustees and an industry representative.

- However, in 1985, the committee entrusted the entire management of the fund to the **Prime Minister, who currently has sole discretion for fund disbursal.**
- A joint secretary in the PMO administers the fund on an honorary basis. States also have similar **Chief Minister's Relief Funds.**

National Disaster Response Fund (NDRF)

- It is a fund managed by the Central Government to meet the expenses for **emergency response, relief and rehabilitation due to any threatening disaster situation or disaster.**
- It is defined in **Section 46 of the Disaster Management Act, 2005.** It is placed in the **"Public Account"** of GOI under "reserve funds not bearing interest".
- **NDRF is constituted to supplement the funds of the State Disaster Response Funds (SDRF),** in case of a disaster of severe nature, provided adequate funds are not available in SDRF.

Eligibility:

- **NDRF guidelines state that natural calamities of cyclones, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloud burst, pest attack and cold wave and frost considered to be of severe nature by Government of India (GoI) and requiring expenditures by a state government in excess of the balances available in its own SDRF will qualify for immediate relief assistance from NDRF.**
- For availing the NDRF funds, states are required to submit a memorandum indicating the sector-wise damage and need of funds. The Centre, on its part, assesses the damage and grants the additional funds to states.
- The financial assistance from NDRF is for providing immediate relief and is not compensation for loss/damage to properties /crops. In other words, NDRF amount can be spent only towards meeting the expenses for emergency response, relief and rehabilitation.
- **The National Executive Committee (NEC) of the National Disaster Management Authority takes decisions on the expenses from National Disaster Response Fund.**

Sources of Financing NDRF:

- It is financed through the levy of a cess on certain items, chargeable to **excise and customs duty**, and approved annually through the Finance Bill.
- The requirement for funds beyond what is available under the NDRF is met through general budgetary resources.

State Disaster Response Funds:

- It has been constituted in each State under **Section 48 (1) (a) of the Disaster Management Act, 2005.**
- The fund is the primary fund available with State Governments for responses to notified disasters.

Funding Pattern:

- The **Central Government contributes 75% to the SDRF in general States and 90% in North-East and Himalayan States.**
- The annual Central contribution is released in two equal installments as per the recommendation of the Finance Commission.
- As per the guidelines, the funds are released on receipt of **Utilisation Certificate** of the amount released in the earlier instalment and receipt of a report from the State Government on the activities undertaken from SDRF.
- However, in view of the urgency, these requirements were waived while releasing the funds this time.
- The fund is to be **used only for meeting the expenditure for providing immediate relief to the victims of notified calamities like cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloud burst, pest attack and frost & cold wave.**
- Allocation of SDRF funds to the States is based on multiple factors like past expenditure, area, population, and disaster risk index.

Topic 71. CENSUS POSTPONED AGAIN, TO BE DELAYED TILL AT LEAST OCTOBER NEXT YEAR***Important for the subject: Polity***

The **deadline to freeze the administrative boundaries** of districts, tehsils, towns, municipal bodies and others for the Census has been **extended till June 30, 2024.**

- This means the decennial exercise, which should have started in 2020, will now be postponed again till at least October 2024, as it usually takes about three months to prepare the list of enumerators after setting the boundaries.

Need of Freezing Administrative Boundaries:

- **Before every Census, states are required to provide information on changes in the number of notified districts, villages, towns and other administrative units such as tehsils, talukas and police stations to the Registrar General of India (RGI).**

- **Freezing of boundary limits of administrative units, at least three months prior**, thus is a prerequisite for conducting the census, to prevent State governments' tendency to create new districts and tehsils or reorganise existing ones.
- If changes in administration boundaries happen during a Census, there would be chaos in the field over supervision of such areas. This could lead to some areas being left out of the Census. The house-listing operations were traditionally taken up in various States at different points of time between March and September of the year prior to the Census.
- As a result, the government may have decided to freeze administrative boundaries to coincide with house-listing operations, thereby shortening the time between the freezing of boundaries and the actual Census enumeration.

About Census

- The **Census is the enumeration of the population of the country and it is being conducted at an interval of 10 years by the Office of the Registrar General and Census Commissioner of India** under the Ministry of Home Affairs.
- In the Census, data is collected on demographic and various socio-economic parameters like education, language, marriage, fertility, disability, occupation and migration of the individuals.
- It was **first started under British Viceroy Lord Mayo in 1872** and the first systematic census in India was held in 1881.
- The **Census 2021 will be the 15th Census** and will be conducted in two phases, i.e., house listing and population enumeration. It will also provide a facility to the public for self-enumeration and for the first time, the exercise will use Mobile App for data collection.
- In addition to allowing online self-enumeration, enumerators will continue home visits to collect census data as in the past.

Significance of Census

- The Census provides population data and characteristics, housing and amenities for every village and town. It helps in framing government programs to uplift vulnerable sections and it is used to validate or reject estimates of various sample surveys.
- The Census data are used to determine the number of seats to be reserved for SCs, STs in Parliament and State legislatures and delimitation of constituencies.
- In case of panchayats and municipal bodies, reservation of seats for SCs and STs is based on their proportion in the population. Other than the Census, there is no other source that can provide this information.
- It is also the basis for reviewing the country's progress in the past decade, monitoring the ongoing schemes of the government and planning for the future.

Topic 72. THE SAHITYA AKADEMI MUST DO MORE TO PROMOTE INDIAN LITERATURE

Important for the subject: History

Sahitya Akademi has recently announced its annual Sahitya Akademi Award 2023 in **24 languages**.

Sahitya Akademi Award 2023

- **Awards:** 9 books of poetry, 6 novels, 5 short story collections, 3 essays and 1 literary study have won the Sahitya Akademi Awards this year.
- **Process:** The awards recommended by distinguished jury members were approved by the **Executive Board of the Sahitya Akademi under the Chairmanship of the President of the Akademi.**

About Sahitya Akademi

- It was founded in **1954 as an autonomous body under the Union Culture Ministry** and is dedicated to **promoting literature in Indian languages.**
- It is the central institution for literary dialogue, publication and promotion in the country and the only institution that **undertakes literary activities in 24 Indian languages.** It was registered as a society in 1956 under the **Societies Registration Act of 1860.**

Functions:

- It works actively to **develop Indian literature.** Set high literary standards to foster and coordinate literary activities in all the **Indian languages. Promote the cultural unity** of the country through literary activities.
- **Awards:** The first Awards were given in 1955. The award is in the form of a casket containing an **engraved copper plaque, a shawl, and ₹1, 00, 000.**
- **Literary Works:** Akademi gives **24 awards annually to literary works in the languages it has recognized.**
- **Literary Translation:** 24 awards are given annually to literary translations from and into the languages of India.
- **Bhasha Samman:** It also gives **special awards for significant contributions to the languages** not formally recognized by the Akademi and for contributions to classical and medieval literature.
- **Languages Recognised:** Besides the 22 languages enumerated in the Constitution of India, the Akademi has recognised **English and Rajasthani** as languages in which its programme may be implemented.

Topic 73. LIFE THROUGH GEOMETRY IN WARLI

Important for the subject: History

Warli Whisperers by the Inherited Arts Forum traces the artistic journey of the Mashe family from Maharashtra.

- Warli is a traditional art form of **Maharashtra**. Its roots can be traced to as early as the 10th century A.D.
- These paintings are distinctive with their **vivid contrast expressions**. These paintings are mainly dominated by **basic geometric shapes like circles, triangles and squares**.
- These geometric shapes stand as a symbol of **natural elements in our environment**. For example, the circles represent the sun and moon, the triangles represent the mountains and the squares are considered as the central motifs of the painting.
- **People and animals are represented by two inverted triangles joined together**, where the upper triangle is the torso and the lower triangle is the pelvis.
- The **central theme of the paintings are scenes portraying hunting, fishing, farming, festival and dances, trees and animals are used to surround the central theme**.
- Warli art form is being used by many artists to beautify cities and spread **awareness through wall paintings**. It is also being used to beautify bags, bed sheets and many other items.
- **Warli is the vivid expression of daily and social events of the Warli tribe of Maharashtra, used by them to embellish the walls of village houses.**

Warli Tribe

- They are an indigenous tribe or Adivasis, **living in the Mountainous as well as coastal areas of Maharashtra-Gujarat border and surrounding areas**.
- They speak an **unwritten Warli language** which belongs to the southern zone of the Indo-Aryan languages.

Topic 74. INDIAN NAVY UNVEILS NEW EPAULETTES FOR ADMIRALS

Important for the subject: History

The introduction of **new designs for Admirals' epaulettes and renaming of ranks within the Indian Navy** symbolizes India's devotion to its nautical legacy and a **break from colonial legacies**.

- This declaration came after December 4, Navy Day celebrations in **Sindhudurg**.
- It stressed a change toward **embracing Bharatiyata** and emancipating oneself from the slave mentality, or "**Ghulami ki Maansikta**," as the Navy put it.

A Symbolic Change

- The redesigned Admirals' epaulettes mark a symbolic **departure from the past, with the octagon taking center stage**. Inspired by the naval ensign and drawing from the **rajmudra (royal seal) of Chhatrapati Shivaji**, the new design aims to encapsulate **India's rich maritime heritage**.
- The **octagon, golden navy button top, and symbols of an Indian sword and telescope crossed, along with stars indicating ranks**, contribute to a visual representation of the Navy's commitment to national pride and heritage.

A Shift in Nomenclature

- In addition to the redesigned epaulettes, the Indian Navy is set to undergo a change in nomenclature, aligning ranks with Indian traditions.
- The decision to rename ranks from their British counterparts further emphasizes a commitment to assert India's identity and move away from colonial influences.
- This aligns with the broader vision of fostering a sense of pride, encapsulated in the principles of "**Virasat Par Garv**" and liberation from the mentality of servitude.

Embracing Bharatiyata

- The Navy's adoption of the new designs and nomenclature is framed within the larger context of **embracing Bharatiyata** – an ethos that reflects a sense of Indian identity and values.
- The move is not merely symbolic but reflects a deeper commitment to instill **national pride** and independence within the armed forces, resonating with the Prime Minister's vision of a self-reliant and culturally rooted India.

Topic 75. MINISTRY HOLDS MEET WITH CMS OF NORTHEAST STATES OVER LAG IN DEVINE SCHEME

Important for the subject: Schemes

With a little over **10% of funds under the Prime Minister's Development Initiative for North East Region (PMDevINE)** sanctioned so far, the Ministry of Development of North Eastern Region (DoNER) convened a meeting with the Chief Ministers of the States in the region.

What is PM-DevINE?

Origin of PM-DevINE:

- The PM-DevINE scheme as a **Central Sector scheme**, was introduced as a part of the **Union Budget 2022-23**.
- The Cabinet granted approval for the PM-DevINE scheme on 12th October 2022. It has

been granted **100% Central funding**, ensuring that resources are directly allocated to the development initiatives.

- It will be **implemented by Ministry of Development of North-East Region.**

Objectives of PM-DevINE:

- **Infrastructure Development:** In line with the spirit of PM GatiShakti, PM-DevINE aims to fund infrastructure projects in a cohesive manner, ensuring seamless connectivity and accessibility across the NER.
- **Supporting Social Development Projects:** Recognizing the unique needs and challenges of the NER, the scheme endeavors to support social development projects that address critical issues and improve the overall quality of life for the region's inhabitants.
- **Empowering Youth and Women:** PM-DevINE seeks to create **livelihood opportunities** specifically targeting the youth and women of the NER, enabling them to participate actively in the region's development and progress.

Budget Allocation:

- The scheme received an initial allocation of Rs. 1500 crore in the Union Budget 2022-23.
- Over the 4-year period from 2022-23 to 2025-26, which aligns with the remaining years of the 15th Finance Commission period, the scheme has an overall outlay of Rs. 6,600 crore.
- A state-wise, project-wise list of projects approved during FY 2022-23 has been laid out, with each project tailored to address the specific needs of the respective states.

Other Initiatives Related to Development of Northeast Region:

North East Industrial Development Scheme (NEIDS)

North Eastern Council (NEC)

North East Road Sector Development Scheme

- **Connectivity Projects:** **Kaladan Multi-Modal Transit Project (Myanmar) and Bangladesh-China-India-Myanmar (BCIM) Corridor.**
- **Bharatmala Pariyojana** (5,301 km road stretches in NER for improvement) North East has been kept as a priority area under **RCS-UDAN** (to make flying more affordable).

Topic 76. GOVT. TARGETS DOCUMENTS' SATURATION IN PVTG VILLAGES IN ONE WEEK

Important for the subject: Schemes

Centre has set a target of one week to achieve Aadhaar, caste certificate, and Jan Dhan account saturation across 15,000 PVTG habitations in 100 districts.

What is the PM-JANMAN Scheme?

- PM JANMAN is a government scheme that aims **to bring tribal communities into the mainstream.**
- The scheme (comprising Central Sector and Centrally Sponsored Schemes) will be **implemented by the Ministry of Tribal Affairs, in collaboration with the State governments and the PVTG communities.**
- The scheme will concentrate on **11 critical interventions overseen by 9 line Ministries,** ensuring the implementation of existing schemes in villages inhabited by PVTGs.
- It encompasses various sectors, including safe housing under the **PM-AWAS Scheme, access to clean drinking water, improved healthcare, education, nutrition, road and telecommunications connectivity, as well as opportunities for sustainable livelihoods.**
- The plan also includes the establishment of **Van Dhan Vikas Kendras** for trading in forest produce, off-grid solar power systems for 1 lakh households, and solar street lights.
- The scheme is expected to enhance the quality of life and well-being of the PVTGs, by addressing their multiple and intersecting forms of discrimination and exclusion, and by recognizing and valuing their unique and valuable contribution to national and global development.

Who are Particularly Vulnerable Tribal Groups (PVTGs)?

- In 1973, the **Dhebar Commission established Primitive Tribal Groups (PTGs) as a distinct category, encompassing tribal communities characterized by a declining or stagnant population, the use of pre-agrarian technology, economic backwardness, and low literacy.**
- These groups are identified as less developed among the tribal communities.. In **2006, the Government of India renamed the PTGs as PVTGs.** They reside in remote and inaccessible areas, facing challenges due to poor infrastructure and administrative support.
- There are **75 PVTG communities spread across 18 States and Union Territories in India.**
- **Odisha has the highest number of PVTGs (15),** followed by Andhra Pradesh (12), Bihar and Jharkhand (9), Madhya Pradesh and Chhattisgarh (7), Tamil Nadu (6), and

Kerala and Gujarat (5 each).

- The rest of the communities are spread across Maharashtra, West Bengal, Karnataka, Uttarakhand, Rajasthan, Tripura, and Manipur.
- All four tribal groups in the **Andaman** and **one in the Nicobar Islands** are recognized as PVTGs.

Other Initiatives for PVTGs

1. Janjatiya Gaurav Divas.
2. Viksit Bharat Sankalp Yatra.
3. PM PVTG Mission.