

WEEKLY CURRENT AFFAIRS MAGAZINE for



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Topic 1. TOXIC GAS KILLS 11 IN LUDHIANA

Important for the subject: Science and technology

At least 11 people have died following a gas leak in Ludhiana, Punjab. The death is due to the **inhalation of neurotoxic gas.**

Hydrogen sulfide: Fast Facts

- Hydrogen sulfide is a chemical compound with the **formula H₂S**. It is a **colorless chalcogen-hydride gas**. It is **poisonous, corrosive, and flammable**, with trace amounts in ambient atmosphere having a characteristic foul odor of rotten eggs.
- Hydrogen sulfide is **slightly denser than air**. A **mixture of H₂S and air can be explosive**. In general, hydrogen sulfide acts as a reducing agent.

Effects

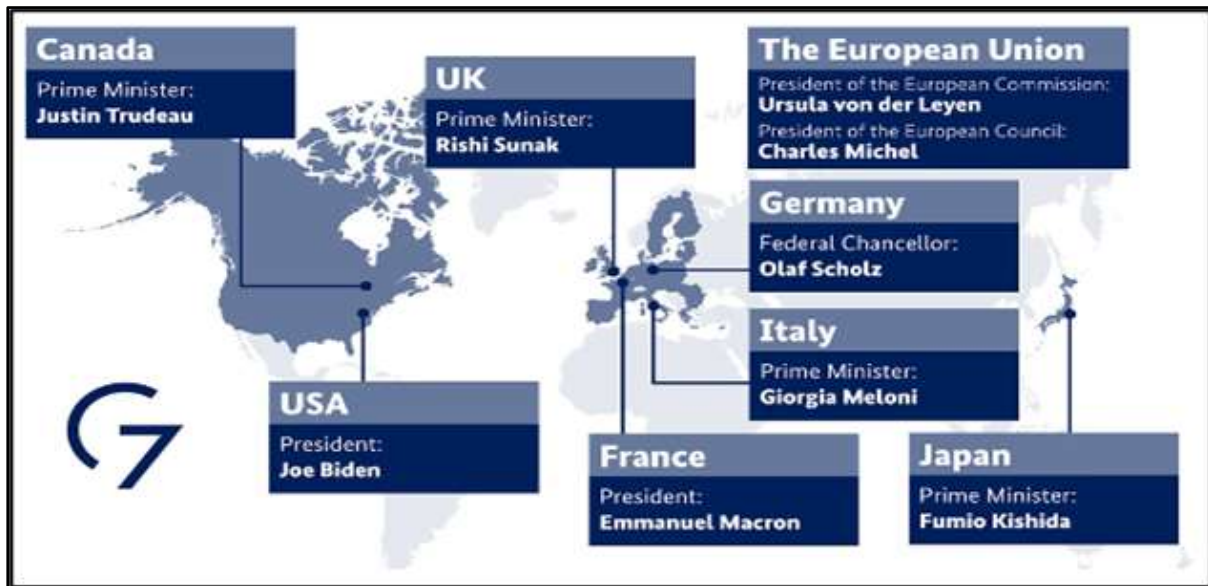
- Hydrogen sulfide is toxic to **humans and most other animals by inhibiting cellular respiration**.
- When it is inhaled or its salts are ingested in high amounts, damage to organs occurs rapidly with symptoms ranging from breathing difficulties to convulsions and death.
- Despite this, the **human body produces small amounts of this sulfide** and its mineral salts, and uses it as a signaling molecule.

Sources

- Hydrogen sulfide is **often produced from the microbial breakdown of organic matter in the absence of oxygen, such as in swamps and sewers**; this process is commonly known as **anaerobic digestion**, which is done by sulfate-reducing microorganisms.
- It also **occurs in volcanic gases, natural gas deposits**, and sometimes in **well drawn water**.
- It can also be associated with **animal farms, industrial plants, sewers or sewage treatment plants**.

Topic 2. G7 SHOULD ADOPT 'RISK-BASED' AI REGULATION

Important for the subject: Science and Technology



News in Brief

G7 advanced nations should adopt “risk-based” regulation on artificial intelligence, their digital ministers agreed in a joint statement issued at the end of a two-day meeting in Japan.

They also insisted to “preserve an open and enabling environment” for the development of AI technologies and be based on democratic values. This comes as European lawmakers hurry to introduce an AI Act to enforce rules on emerging tools such as Chat GPT. Policy instruments to achieve the common vision and goal of trustworthy AI may vary across G7 members. The top tech officials from G7 – Britain, Canada, the EU, France, Germany, Italy, Japan and the United States – met in Takasaki, a city about 100 km (60 miles) northwest of Tokyo.

Chat GPT

- A generative AI tools
- A chat bot developed by Microsoft Corp-backed Open AI. Has become the fastest-growing app in history since its launch

Future G7 discussions on generative AI

- To be convened on topics like Governance

- How to safeguard intellectual property rights including copyright Promote transparency. Address disinformation including information manipulation by foreign forces.

Previous Issues with AI Tools

- Italy, a G7 member, took Chat GPT offline or banned it recently to investigate its potential breach of personal data rules. The move has inspired fellow European privacy regulators to launch probes. Italy lifted the ban.
- EU law makers agree a new draft of its upcoming AI Act, including copyright protection measures for generative AI. It may include labelling obligations for AI generated images or music.

Japan's Positive View on AI

- Japan took an accommodative approach on AI developers, pledging support for public and industrial adoption of AI.
- Hopes for G7 to agree on agile or flexible governance, rather than hindering, catchall regulation over AI technology. Japan while hosting the G7 Summit in Hiroshima in late May, will discuss AI rules with world leaders.

About Takasaki

- A transport and business hub
- A city of the daruma doll – associated with Shorinzan Darumaji Temple of Zen Buddhism. Daruma dolls – a popular handicraft and good luck charm, made from papier mache using a strong, fibrous traditional paper called washi, represented is the Bodhi dharma – a legendary monk credited with bringing Buddhism to China.

About G7

- The **Group of Seven (G7)** is an inter-governmental political forum consisting of Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States. Its members are the world's largest IMF advanced economies and wealthiest liberal democracies.
- As of 2020, the collective group accounts for a little over 50% of global net wealth (which is \$418 trillion), 32 to 46 percent of global gross domestic product, and about 770 million people or 10 percent of the world's population.
- Since the start of 2023, Japan has taken over the presidency of the G7. Germany was

2022 chair. The G7 was founded primarily to facilitate shared macroeconomic initiatives in response to contemporary economic problems. Following the global financial crisis of 2007–2008, G7 finance ministers pledged to take “all necessary steps” to stem the crisis.

- Presently, The G7 has continued to take a strong stance against Russia’s “destabilizing behavior and malign activities” in Ukraine and elsewhere around the world.

Topic 3. DETECTING BREAST CANCER RISK

Important for the subject: Science and Technology

Why in news?

A new study has found how breast tissue density plays a role in detecting breast cancer risk. A study has found that while breast density declines with age, a slower rate of decline in one breast often precedes a cancer diagnosis in that breast.

What is Breast Cancer?

- Breast cancer is a disease in which cells in the breast grow out of control. There are different kinds of breast cancer. The kind of breast cancer depends on which cells in the breast turn into cancer.
- Breast cancer can spread outside the breast through blood vessels and lymph vessels. When breast cancer spreads to other parts of the body, it is said to have metastasized.

The common kinds of breast cancer are—

- **Invasive ductal carcinoma:** The cancer cells begin in the ducts and then grow outside the ducts into other parts of the breast tissue. Invasive cancer cells can also spread, or metastasize, to other parts of the body.
- **Invasive lobular carcinoma:** Cancer cells begin in the lobules and then spread from the lobules to the breast tissues that are close by. These invasive cancer cells can also spread to other parts of the body.

Causes of Breast cancer

- Breast cancer is not a transmissible or infectious disease. Unlike some cancers that have infection-related causes, such as human papillomavirus (HPV) infection and cervical cancer, there are no known viral or bacterial infections linked to the development of

breast cancer.

- Certain factors increase the risk of breast cancer including increasing age, obesity, harmful use of alcohol, family history of breast cancer, history of radiation exposure, reproductive history (such as age that menstrual periods began and age at first pregnancy), tobacco use and postmenopausal hormone therapy.

Behavioral choices and related interventions that reduce the risk of breast cancer include:

- Prolonged breastfeeding
- Regular physical activity
- Weight control
- Avoidance of harmful use of alcohol
- Avoidance of exposure to tobacco smoke
- Avoidance of prolonged use of hormones
- Avoidance of excessive radiation exposure.
- Unfortunately, even if all of the potentially modifiable risk factors could be controlled, this would only reduce the risk of developing breast cancer by at most 30%.

India Facts

- According to a report by the Indian Council for Medical Research on the 'Burden of cancers in India', seven cancers accounted for more than 40% of the total disease burden: lung (10.6%), breast (10.5%), esophagus (5.8%), mouth (5.7%), stomach (5.2%), liver (4.6%) and cervix uteri (4.3%).

Policies and schemes in India

- In order to prevent and control major Non-Communicable Diseases (NCD), the **National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)** was launched in 2010 with focus on strengthening infrastructure, human resource development, health promotion, early diagnosis, management and referral.
- Under NPCDCS, **NCD Cells** are being established at National, State and District levels for program management, and **NCD Clinics** are being set up at District and CHC levels,

to provide services for early diagnosis, treatment and follow-up for common NCDs.

- For the Cancer component, there is the **Tertiary Care Cancer Centers (TCCC) scheme**, which aims at setting up/strengthening of 20 State Cancer Institutes (SCI) and 50 TCCCs for providing comprehensive cancer care in the country. Under the scheme there is provision for giving a ‘one time grant’ of Rs. 120 crore per SCI and Rs. 45 crore per TCCC, to be used for building construction and procurement of equipment, with the Centre to State share in the ratio of 60:40 (except for North Eastern and Hilly States, where the share is 90:10).

Treatment – WHO Guidelines

- WHO outlines three pillars of action with specific key performance indicators: Recommending countries to focus on breast cancer **early-detection program** so that at least **60 per cent of breast cancers** are diagnosed and **treated as an early-stage diseases**.
- **Diagnosing breast cancer within 60 days of the initial presentation** can improve breast cancer outcomes. Treatment should start within three months of the first presentation. **Managing breast cancer** so that at least **80 per cent of patients complete their recommended treatment**.
- World Health Organization (WHO) announced an initiative called the “**Global Breast Cancer Initiative**”. GBCI employs 3 key strategies to achieve these objectives: health promotion and early detection; timely diagnosis; and comprehensive breast cancer management. Through GBCI, WHO provides guidance to governments across the world on ways to strengthen systems for detecting, diagnosing and treating breast cancer, to further their capacities to manage other types of cancer.

Global Breast Cancer Initiative:

Aim

- The initiative aims to reduce global breast mortality by 2.5% by 2040.
- The initiative will particularly focus on reducing deaths in low-income countries. There the progress to tackle the disease is relatively slow.

Key Features of the Initiative:

- **Guidance to Governments:** Under the initiative, WHO will work with other UN

agencies. They will provide guidance to governments on how to strengthen systems for diagnosing and treating breast cancer. It is expected to improve capacities to manage other types of cancer.

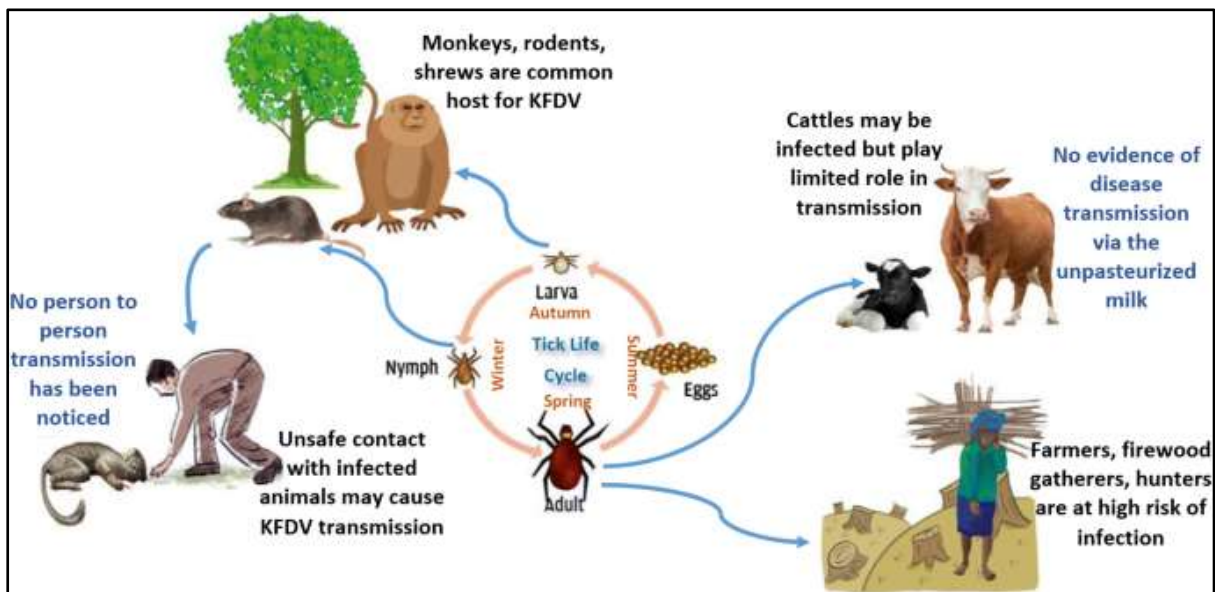
- **Evidence-based Technical Package:** An evidence-based technical package will also be provided to countries as part of the initiative. It will incorporate existing WHO cancer tools and products.

Breast Density

- The study published in JAMA Oncology finds that while breast density declines with age, a slower rate of decline in one breast often precedes a cancer diagnosis in that breast.
- Breast density is now an acknowledged risk factor for breast cancer, albeit one of many. Dense tissue also makes tumors harder to detect in imaging scans.

Topic 4. KYASANUR FOREST DISEASE

Important for the subject: Science and technology



Restoring Karnataka’s forests can curb its monkey menace and Kyasanur disease outbreaks. Covid-19 pandemic has demonstrated the devastating impact of a zoonotic disease. While the way to avert such pandemics is to break the chain of transmission from wildlife to humans.

- One such zoonotic illness where spillover events appear to have increased, resulting in recurring outbreaks, is Kyasanur forest disease (KFD) or monkey fever. Researchers

believe that the **disease was for centuries endemic to the forests of the Western Ghats**, circulating silently among primates and ticks. It was **first identified in 1957 after an outbreak in a Kyasanur forest village in Shivamogga district of Karnataka**.

- Though outbreaks have **remained largely confined to the area**, the disease in the past few decades has begun to spread to other states, with Tamil Nadu and Kerala reporting KFD for the first time in 2013, followed by Goa in 2015 and Maharashtra in 2016.
- Further analysis showed that the **prevalence of KFD and density of ticks are highest in areas where forests are degraded**. This shows that **habitat loss is the root cause of the increase in human-macaque conflicts** as well as KFD outbreaks. Over **70 per cent of forest land has been de-notified for purposes like growing timber**.
- **Ecological restoration of such degraded forests** seems to be the only sustainable and ethical solution to mitigate the situation. This may be attained by **reconnecting wildlife corridors and forest fragments**, which in turn will minimize human-wildlife conflict.
- **In plantations, mature trees can be periodically removed in patches and native fruit trees be planted to restore the habitat**. With time, entire plantations can be converted into native forests, addressing the problems of macaque conflict and KFD.

Kyasanur forest disease

- Kyasanur Forest Disease (KFD), also known as **monkey fever**, is a **tick-borne viral disease** that primarily affects monkeys and humans. It was first identified in 1957 in the Kyasanur Forest in Karnataka, India.
- **Transmission:** KFD is **transmitted to humans through the bite of infected ticks** that primarily feed on monkeys. **Humans can also contract the virus through contact with the blood or tissues of infected animals**. Person-to-person transmission is rare.
- **Symptoms:** The symptoms of KFD in humans include **high fever, headache, muscle pain, and vomiting**. In severe cases, the disease can progress to hemorrhagic fever and neurological complications.
- **Prevention:** There is **no specific treatment for KFD**, and prevention is focused on reducing exposure to infected ticks. This includes wearing protective clothing, using tick repellents, and avoiding areas where ticks are prevalent. A **vaccine is available for individuals at high risk of exposure to the virus**, such as forest workers and healthcare workers.
- **Control measures:** The control measures for KFD include **surveillance for outbreaks**,

prompt diagnosis and treatment of cases, and control of tick populations through measures such as habitat modification and use of acaricides (tick-killing chemicals).

- **Geographical spread:** KFD is endemic to certain regions in India, including parts of **Karnataka, Maharashtra, Kerala, Tamil Nadu, and Goa**. Outbreaks of the disease have also been reported in neighboring countries such as Sri Lanka and Malaysia.

Topic 5. ANTIBIOTIC-RESISTANT BACTERIA FOUND IN SUNDERBANS SEDIMENTS

Important for the subject: Science and Technology

The diversity of antibiotic-resistant genes in the mangrove region of Sunderbans and Kerala is much higher than that of China. Bacteria found in the sediments of the Sunder ban delta region can **withstand antibiotics**, a new study has shown. The bacteria are **developing anti biotic resistant genes (ARG) due to the constant dumping of waste and pollutants** in the network of water bodies.

- Researchers found **bacteria such as Rhizobium, Marin on bacter, Arthrobacter and Cycloclasticusn** in the sample collected from five islands. **These bacteria are adept at degrading heavy pollutants such as polycyclic aromatic hydrocarbons (PAHs)**.
- At least 42 ARGs were found at various levels in these bacteria where 17 resistance genes were enriched while 25 were depleted. The study also found the diversity of ARGs in the mangrove region of Sunderbans and Kerala to be much higher than that of China.

Topic 6. PSYCHEDELIC SUBSTANCES

Important for the subject: Science and technology

Psychedelic drugs, banned in India under the Narcotic Drugs and Psychotropic Substances Act, are emerging in research as promising ways to treat treatment resistant depression and post-traumatic stress disorder.

Psychedelics

- Psychedelics are a **group of drugs that alter perception, mood, and thought processing while a person is still clearly conscious**. Psychedelics are **non-addictive, non-toxic and compared to illicit drugs**, they are less harmful to the end user.

- In India, the **Narcotic Drugs and Psychotropic Substances Act 1985** prohibits the use of **psychedelic substances**.
- **Ketamine**, a dissociative anesthetic with psychedelic properties, is used under strict medical supervision, for an anesthesia and treatment-resistant depression. A psychiatrist named Humphrey Osmond first used the term 'psychedelic' in 1957.

How do the drugs work in the body?

- An **intriguing phenomenon called synaesthesia** may occur, where the **sensory modalities cross** and the user may 'hear color' or 'see sounds'.

Psychedelics are neither stimulants nor depressants of brain activity.

- Instead, they increase the cross-talk between different brain networks, and this correlates with the Important for the subjective effects of psychedelics.

Can such substances cause harm?

- **Death due to direct toxicity of psychedelics has not been reported.** Synthetic psychedelics have been associated with **acute cardiac, central nervous system, and limb ischaemia**, as well as **serotonin syndrome**. There have also **been reports of death attributed directly to synthetic psychedelic use.**

Recent breakthroughs:

- Recently, the **results from a phase II psilocybin trial found that a single 25-mg dose of psilocybin reduced depression scores** over three weeks in people with treatment-resistant depression.
- In 2017, the **U.S. Food and Drug Administration (FDA)** designated the use of **3, 4-methylenedioxymethamphetamine, also known as MDMA**, to be the **breakthrough therapy in the treatment of post-traumatic stress disorder (PTSD)**.
- In 2018, the **FDA had granted breakthrough therapy status to psilocybin for treatment-resistant depression** as well.
- If larger phase III trials establish their safety and therapeutic efficacy, the FDA and other regulatory bodies may clear these agents for routine clinical use.

Topic 7. WHY INDIAN START-UPS HAVE ACCUSED IAMAI OF SPREADING ‘BIG TECH PROPAGANDA’?

Important for the subject: Science and Technology

There is a widening rift between some Indian start-ups and the industry body Internet and Mobile Association of India (IAMAI). Growing divide between Indian startups and the Big Tech, the former increasingly framing the debate as a foreign versus local issue.

What is IAMAI?

- Established in 2004, the IAMAI is a not-for-profit industry body and the country’s only organization representing the digital services industry with over 500 Indian and multinational corporations as its members, which include established companies in diverse sectors of the digital ecosystem and start-ups. It represents varied sectors – digital advertising, digital entertainment, traveltech, online gaming, digital payments, fintech, digital commerce, ed. tech, health tech, agri. tech, big data, ML, AI & IoT, AR/ VR, logistics-tech and so on.

What are Big Tech Companies (BTCs)?

- BTCs refer to the most dominant, prolific and largest technology companies in their respective sectors. Their products and services are used globally and have become heavily relied upon by businesses and individuals alike, bringing up privacy, safety and Antitrust concerns about their influence and operations. It typically includes GAFAM (Google, Amazon, Facebook (Meta), Apple), Microsoft. May also include Ali-baba, Tencent, Tesla, etc.

Systematically Important Digital Intermediaries

- The PSC on Finance recommended that India must identify the leading players in digital markets that can negatively influence competitive conduct. They should be categorized as Systemically Important Digital Intermediaries (SIDIs) based on their revenue, market capitalization, and the number of active businesses and end users.
- SIDIs should annually submit a report to the Competition Commission of India (CCI) detailing the measures taken to comply with various mandatory obligations.

New Law to tackle Anti-competitive practices of BTCs

- The Committee recommended that the government should introduce a Digital Competition Act to ensure a fair, transparent, and contestable digital ecosystem.

Asia Internet Coalition (AIC)

- Established in 2010 as an industry association that promotes the understanding and resolution of Internet policy issues in the Asia Pacific region. Co-founded by eBay, Google, Nokia, Skype, and Yahoo! AIC lobbies government agencies to address public policy issues and facilitate the development of the internet economy in the Asia Pacific region.

Anti-Competitive Practices by Big Tech Companies

- **Self-preferencing:** An entity may have the dual role of providing the platform and competing on the same platform. Self-preferencing is a practice wherein a platform favors its own services or the services of its subsidiaries. **Anti-steering:** Such provisions are clauses wherein a platform prevents its business users from steering its customers to offers other than those provided by the platform.
- **Deep Discounting,** refers to a practice wherein an e-commerce company offers a heavy discount on a good or service that is sold in high quantities. This is possible due to high discounts got on bulk purchases by the e-commerce company from manufacturers.
- **Search and Ranking Preferences:** If any product or service takes precedence in a list displayed, while searching in a platform, it indicates preference or search-bias in favor of those sponsored product or service or orders fulfilled by the platform itself.

Topic 8. GOD FATHER OF ARTIFICIAL INTELLIGENCE (AI) CAUTIONS AGAINST ITS IMPACT: HOW GEOFFREY HINTON HELPED THE DEVELOPMENT OF AI

Important for the subject: Science and Technology

Geoffrey Hinton, 75, announced his resignation from Google in a statement to the New York Times, saying he now regretted his work. Hinton is not alone in voicing fears regarding AI. More than 1,000 technology leaders and researchers, including Apple co-founder Steve Wozniak and Tesla founder Elon Musk, signed an open letter calling for a six-month pause

on the developing AI systems further, saying they “profound risks to society and humanity.”

Machine Learning

- Machine learning is a branch of artificial intelligence (AI) and computer science that provides machines with the capacity to automatically learn from data and previous experiences by identifying patterns to generate predictions for new processes with minimal human intervention.
- **Applications** – social media (Facebook), Transportation (Uber), Language Translation (Google Translate), Image or Speech Recognition (a machine can be fed thousands of images and then trained to identify what different animals or plants look like), Predicting Traffic Patterns, E-commerce Product recommendations, stock market and day trading, online fraud recognition, etc.

Neural Network

- A neural network is a method in artificial intelligence that teaches computers to process data in a way that is inspired by working of the human brain with its networks of neurons. It is a mathematical system that learns skills by analyzing data. It is a subset of machine learning, aiming to solve practical problems through novel learning algorithms.
- The term ‘neural networks’ refers to “systems composed of layers of relatively simple computing elements called ‘neurons’ that are simulated in a computer.” These “neurons” only loosely resemble the neurons in the human brain, and influence one another – Association for Computing Machinery.
- **Applications** – Speech Recognition, classify objects in images, machine translation, Chat bots answering a wide variety of questions, etc.

Three Concerns with AI

- Tools like Chat GPT may flood the internet with false photos, videos and text so that true data cannot be identified by the average internet user – Concerns of Misinformation. Over time machines may take over human jobs. AI are digital systems that have more capacity to instantaneously process large amounts of data, than the humans who are biological systems. In future such data can be used can be used by “bad actors” for negative uses.

Solutions Proposed

- Companies must develop a set of shared safety protocols for advanced AI design and development, which can be overseen by independent outside experts.
- A proper framework with a legal structure and fool proofing, including watermarking systems to help distinguish real from synthetic should be created. Facts Bard – Google’s AI Chat bot

Topic 9. BIOSYNTHETIC CLOCK

Important for the subject: Science and Technology

Biosynthetic Clock

A biosynthetic ‘clock’ **keeps the body’s cells from getting old** or in other words, **reaching normal levels of deterioration** related to ageing. Human lifespan relates to how quickly individual cells age. Recent research has shown that **cells follow two distinct paths during ageing**, and **these are controlled by a central, genetic regulatory circuit**.

Manipulating these processes can be used to extend the lifespan of cells.

- Cells, including those of yeast, plants, animals and humans, **all contain gene regulatory circuits** that are **responsible for many physiological functions**, including ageing. Cells follow a **variety of molecular changes through their entire lifespan** until they eventually degenerate and die. **But cells of the same genetic material and within the same environment can travel along distinct ageing routes.**
- About **half of the cells age through a gradual decline in the stability of DNA**, where genetic information is stored. The **other half ages along a path tied to the decline of mitochondria**, the energy production units of cells. Thus directing the cell’s journey among these paths can significantly influence ageing.
- From its normal role of functioning like a toggle switch, these **regulatory circuits can be engineered to generate a negative feedback loop to stall the ageing process**. The **rewired circuit operates as a clock-like device**, called a **gene oscillator**, that **drives the cell to periodically switch between two detrimental “aged” states** – or pathways– avoiding prolonged commitment to either, and thereby slowing the cell’s degeneration. These advances **resulted in a dramatically extended cellular lifespan**, setting a new record for life extension through genetic and chemical interventions.

Topic 10. WASTEWATER STUDY DETECTS A LARGE, SILENT WAVE IN BENGALURU

Important for the subject: Science and technology

It appears that Bengaluru witnessed an invisible wave of COVID-19 that was far bigger than the third wave driven by BA.1 and BA.2 Omicron variants in January 2022. Based on 2,856 genome sequences from India posted on GISAID between December 1, 2022 and April 8, 2023, a team led by Dr. Rajesh P. Karyakarte, Head of the Microbiology Department at the BJ Medical College, Pune found that the XBB.1.16 lineage had grown from 9.3% in the first week of February to 79.17% in the first week of April.

How wastewater surveillance is helping the COVID-19 fight

- People infected with SARS-CoV-2 can shed the virus in their feces, even if they don't have symptoms. The virus can then be detected in wastewater, enabling wastewater surveillance to capture presence of SARS-CoV-2 shed by people with and without symptoms.
- This allows wastewater surveillance to serve as an early warning that COVID-19 is spreading in a community.
- It is difficult to test everyone who has COVID-19, but it is easy to take a single wastewater test and you will have effectively tested everyone who lives in a particular area.

National Wastewater Surveillance System (NWSS)

- In response to the COVID-19 pandemic, **CDC (Centre for disease control and prevention)** launched the National Wastewater Surveillance System (NWSS) in September 2020.
- CDC developed NWSS to coordinate and build the nation's capacity to track the presence of SARS-CoV-2, the virus that causes COVID-19, in wastewater samples collected across the country.

Global Initiative on Sharing All Influenza Data (GISAID)

- The GISAID platform was launched on the occasion of the Sixty-first World Health Assembly in May 2008.

- GISAID is a **global science initiative and primary source for genomic data of influenza viruses and the novel coronavirus responsible for COVID-19.**

Headquarters: Munich, Germany

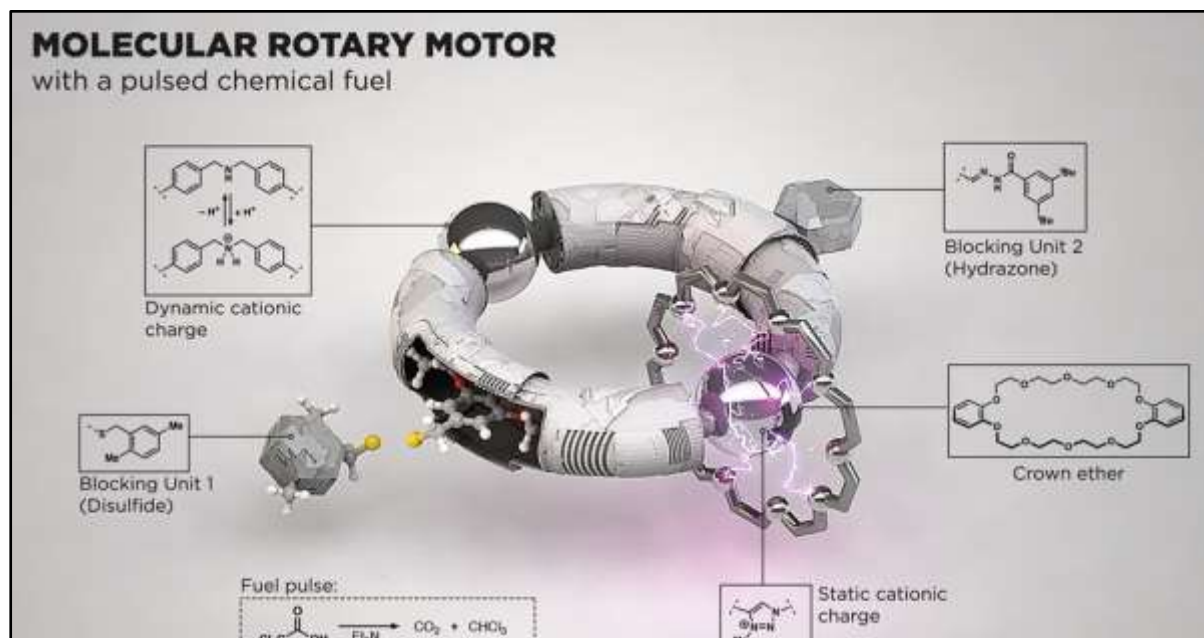
- In 2010 the Federal Republic of Germany became the official host of the GISAID platform and its database (named EpiFlu) providing sustainability of the platform and stability through its public-private-partnership with the GISAID Initiative to this day.
- In 2013 the European Commission recognized GISAID as a research organization and partner in the PREDEMICS consortium, a project on the Preparedness, Prediction and the Prevention of Emerging Zoonotic Viruses with Pandemic Potential using multidisciplinary approaches.

Key role:

- The Initiative ensures that **open access to data in GISAID is provided free-of charge to all individuals that agreed to identify themselves and agreed to uphold the GISAID sharing mechanism governed through its Database Access Agreement.**

Topic 11. SCIENTISTS HELP FIND NEW KIND OF MOLECULAR MOTOR

Important for the subject: Science and technology



An international team of researchers, including from the National Centre for Biological

Sciences (NCBS), Bengaluru, has reported a new kind of molecular motor.

- Cells have a fascinating feature to neatly organize their interior by using tiny protein machines called molecular motors that generate directed movements. Most of them use a common type of fuel, a kind of chemical energy, called ATP to operate.
- Now researchers from the **Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG)**, the Cluster of Excellence Physics of Life (PoL) and the Biotechnology Center (BIOTEC) of the TU Dresden in Dresden, Germany, and the **National Centre for Biological Sciences (NCBS) in Bangalore, India**, discovered a novel molecular system that uses an alternative chemical energy and employs a novel mechanism to perform mechanical work.
- By repeatedly contracting and expanding, this molecular motor functions similarly to a classical Stirling engine and helps to distribute cargo to membrane-bound organelles. It is the **first motor using two components, two differently sized proteins, Rab5 and EEA1, and is driven by GTP instead of ATP.**
- In a 2016 paper, researchers from Australia and Germany reported that when an enzyme called Rab5 binds to a long protein called EEA1, the protein loses its taut and rigid shape and becomes floppy. This ‘collapse’ pulls two membranes inside a cell closer to each other.
- In the new study, researchers have reported that **EEA1 regains its rigid shape in another mechanism so that it can become floppy again to pull the membranes closer, creating a new kind of two-part molecular motor.**
- When the 2016 paper was published, it was unclear whether EEA1 could resume its rigid shape, so that the whole process could repeat itself without the help of other proteins.
- The researchers of the latest study reported that EEA1 draws **energy from a reaction called GTP hydrolysis to become rigid again.** The GTP hydrolysis is mediated by enzymes called GTPases. Rab5 is one such.

Topic 12. A BOOST FOR SCIENCE, A WIDER WINDOW TO THE UNIVERSE

Important for the subject: Science and technology

The **United States National Science Foundation** is partnering with top U.S. universities and **India’s Raja Ramanna Centre for Advanced Technology**, or RRCAT (a unit of

Department of Atomic Energy, Government of India) to **launch LIGO-India**.

Background

- **General theory of relativity:** Albert Einstein's 1916 general theory of relativity first predicted the phenomenon of gravitational waves. But it took physicists another century to prove the theory.
- **Failed to observe:** Most of the history of astronomy has been accomplished by observing light and the electromagnetic spectrum, everything from radio waves to infrared and visible light to high-energy x-rays and gamma rays, but gravitational waves are fundamentally different. They are ripples in space-time, the fabric of the universe itself.
- **First observation:** In 2015, for the first time in human history, physicists observed the gravitational waves emanating from two merging black holes, 1.3 million light years from earth.

Laser Interferometer Gravitational-Wave Observatory (LIGO)

- LIGO is an international **network of laboratories that detect gravitational waves**. LIGOs are designed to measure changes in distance that are several orders of magnitude smaller than the length of the proton. Such high precision Instruments are needed because of the extremely low strength of gravitational waves that make their detection very difficult.

First Detection of Gravitational Waves:

- The **LIGO in the US first detected gravitational waves in 2015**, which led to a Nobel Prize in Physics in 2017.
- These **gravitational waves were produced by the merger of two black holes**, which were about 29 and 36 times the mass of the Sun, 1.3 billion years ago. Black hole mergers are the source of some of the strongest gravitational waves.

Operational LIGO:

- Besides the **United States (in Hanford and Livingston)**, such **gravitational wave observatories are currently operational in Italy (Virgo) and Japan (Kagra)**. **Fifth one to be setup in India**.
- To detect gravitational waves, **four comparable detectors need to be operating**

simultaneously around the globe.

Working Mechanism:

- LIGO consists of two 4-km-long vacuum chambers, set up at right angles to each other, with mirrors at the end.
- When light rays are released simultaneously in both chambers, they should return at the same time.
- However, if a gravitational wave arrives, one chamber gets elongated while the other gets squished, causing a phase difference in the returning light rays. Detecting this phase difference confirms the presence of a gravitational wave.

LIGO-India Project

- The project aims to **detect gravitational waves from the Indian LIGO would have two perpendicularly placed 4-km long vacuum chambers**, that constitute the most sensitive interferometers in the world. It is expected to begin scientific runs from 2030.
- It will be **located in the Hingoli district of Maharashtra**, about 450 km east of Mumbai.

Purpose and Significance:

- It will be the **fifth node of the planned network and will bring India into a prestigious international scientific experiment**.
- It will make India a unique platform that brings together the frontiers of science and technology of the quantum and the cosmos.

Benefits of LIGO-India:

- By joining the global network, LIGO-India will push forward the boundaries of what science and technology can achieve and help unlock some of the universe's greatest mysteries.
- The LIGO-India project would have several spin-off benefits to Indian science, apart from making India an integral part of one of the most prestigious international scientific experiments.
- The observatory is expected to enable dramatic returns in astronomy and astrophysics, as well as leapfrog Indian science and technology in cutting-edge frontiers of great national

relevance.

What are Gravitational Waves?

- Gravitational waves were first postulated (1916) in Albert Einstein's General Theory of Relativity, which explains how gravity works.
- These waves are produced by the movement of massive celestial bodies, such as black holes or neutron stars, and are the ripples in spacetime that propagate outward.

Topic 13. FDA APPROVES FIRST VACCINE FOR RESPIRATORY SYNCYTIAL VIRUS

Important for the subject: Science and technology

The first of several expected vaccine options for preventing respiratory syncytial virus, or RSV, in older adults has been approved by the FDA.

What is Respiratory syncytial virus (RSV)?

- It belongs to the genus **Orthopneumovirus** within the family **Pneumoviridae** and order **Mononegavirales**.
- RSV is a **highly contagious virus that causes infections of the lungs and breathing passages** in individuals of all age groups. RSV circulation is seasonal, typically starting during the fall and peaking in the winter.
- In older adults, RSV is a common **cause of lower respiratory tract disease (LRTD)**, which affects the lungs and can cause life-threatening pneumonia and bronchiolitis (swelling of the small airway passages in the lungs) RSV is increasingly being recognized as an important pathogen in older adults, with infection leading to an increase in hospitalization rates among those aged 65 years and over, and to increased mortality rates among the frail elderly that approach the rates seen with influenza

RSV Vaccine:

- The U.S. Food and Drug Administration approved **Arexvy, the first respiratory syncytial virus (RSV) vaccine approved for use in the United States**.
- Arexvy is approved for the prevention of lower respiratory tract disease caused by RSV in individuals 60 years of age and older. The shot, called Arexvy, is made by the British

pharmaceutical company GSK.

- **Two more vaccines for RSV by Pfizer and Moderna** have already completed clinical trials on adults older than 60 years and may soon be approved by the FDA.
- **While the vaccine developed by Pfizer is protein based, Moderna has used mRNA technology**, like in the case of the SARS CoV2 vaccine, to develop the RSV vaccine.

Topic 14. 10 INDIAN LANGUAGES TO GET TECHNICAL-TERM DICTIONARIES

Important for the subject: Science and Technology

The **Commission for Scientific and Technical Terminology (CSTT)** is dealing with **technical and scientific terminology in 10 Indian languages** that are underrepresented in the field of education.

- It will introduce fundamental (basic) dictionaries in a span of three to four months. These dictionaries will contain 5000 words per language. The dictionaries will be digital and free of cost. The CSTT will print about 1000 to 2000 copies in each language.
- It should be noted that languages **like Bodo, Santhali, Dogri, Kashmiri, Konkani, Nepali, Manipuri, Sindhi, Maithili, and Sanskrit lack words to describe scientific and technical terms.**
- The initial task of CSTT is to cover 15 disciplines such as journalism, public administration, chemistry, botany, zoology, physics, computer science, engineering (civil and electrical), etc.
- It will further enable textbook formulation for middle, high, and university levels. The dictionaries will be distributed to education boards, universities, and testing agencies to aid in content preparation.

About Commission for Scientific and Technical Terminology (CSTT):

- **CSTT was established on October 01, 1961 in pursuance of a Presidential Order** dated April 27, 1960 with the objective to evolve technical terminology in all Indian Languages.
- It was established **under clause (4) of Article 344 of the Constitution of India.** It is functioning under **Department of Higher Education, Ministry of Education,** Government of India with its headquarters at New Delhi.
- **Primary Function: Evolve standard terminology, propagate its use and distribute it**

widely.

Other functions:

- Preparation and Publication of Bilingual and Trilingual Glossaries involving English/Hindi and other Indian Languages. Preparation and Publication of National terminology.
- Identification and Publication of School Level Terminology and Departmental Glossaries.

Identification of Pan Indian Terms.

- Preparation of Definitional Dictionaries and Encyclopedias. Preparation of University level textbooks, monographs and journals.
- **Grant-in-Aid to Granth Academies, Textbook Boards and University Cells** for University level books in regional languages. Propagation, expansion and critical review of terms coined and defined through training/ orientation program, workshops, seminars etc.

Free distribution of Publications.

- Providing necessary **terminology to the National Translation Mission**. In the process of evolution of **scientific and technical terminology and reference material in Hindi and Indian Languages**, the **Commission shall have collaboration of State Governments, Universities, Regional Text-Book Boards and State Granth Academies**.

Topic 15. SCIENTISTS IDENTIFY MUTATIONS IN DNA FOR EARLY DIAGNOSIS OF DRUG-RESISTANT BACTERIA FOR TB

Important for the subject: Science and technology

According to the World Health Organization, India has the highest burden of Multi Drug Resistant-TB (MDR-TB). There are nearly 0.39 million cases across the world. A group of scientists at **CSIR-Centre for Cellular & Molecular Biology (CCMB)** has observed that **mutations in DNA repair genes can be used for early diagnosis of MDR/XDR-TB**.

It was **found through the whole genome sequencing of bacteria**, that perturbed DNA repair aids in the **acquisition of drug resistance in Mycobacterium Tuberculosis**.

Tuberculosis (TB)

- Tuberculosis (TB) is an infectious disease caused by *Mycobacterium tuberculosis*.
- TB commonly affects the lungs (pulmonary TB) but can also affect other parts (extra pulmonary TB) Tuberculosis spreads from person to person through the air, when people who are infected with TB infection cough, sneeze or otherwise transmit respiratory fluids through the air.
- The most common risk factor associated with TB is HIV & other conditions that impair the immune system. Common symptoms of tuberculosis are chronic cough with blood-tinged sputum, Loss of weight, Loss of appetite, Fever and night sweats, Fatigue, etc.

TB Treatment: consists of four drugs:

- Isoniazid (INH) Rifampicin Pyrazinamide Ethambutol

Multidrug-Resistant TB (MDR-TB)

- In MDR-TB, the bacteria that cause TB develop resistance to antimicrobial drugs used to cure the disease. MDR-TB **does not respond to at least isoniazid and rifampicin**, the 2 most powerful anti-TB drugs.
- Treatment options for MDR-TB are limited and expensive. CBNAAT (Cartridges Based Nucleic Acid Amplification Test) is used for early diagnosis of MDR-TB.

Extensively Drug-Resistant TB (XDR-TB)

- XDR-TB is a form of **multidrug-resistant TB with additional resistance to more anti-TB drugs.**
- People who are resistant to isoniazid and rifampicin, plus any fluoroquinolone and at least one of three injectable second-line drugs (amikacin, kanamycin, capreomycin) are said to have XDR-TB. To achieve goal: To end TB by 2025

Topic 16. FUNGAL FLOOD

Important for the subject: Science and Tech

Increasing disease, aided by climate change, risk to global food security.

A **rapid surge in fungal attacks** on the world's most important crops, worsened by climate

change, could become a “catastrophe” for the world’s food supply, scientists have warned.

- The **five most important crops** for humanity — **rice, wheat, maize, soya beans and potato** — are **vulnerable to fungal diseases** such as **rice blast fungus, wheat stem rust, corn smut, soybean rust and potato late blight**, all caused by water mould oomycete.
- The Food and Agricultural Organization has identified hundreds of fungal diseases that affect 168 crops crucial to provide nutrition to humans. The devastating impact of fungal diseases will worsen due to climate change, the researchers pointed out.
- The **rising temperatures are causing fungal infections to move steadily towards the poles**, about seven kilometers a year. Citing an example, they said wheat stem rust infections, usually reported in tropical countries, have been found in England and Ireland.
- Fungus, which is **primarily a pathogen, produce massive amounts of spores which can remain active in the soil for up to 40 years**, they added. Higher temperatures encourage the development of new fungal pathogen variants.
- Extreme weather conditions such as **storms or tornados can spread the spores in wider geographic ranges**, they stated. For instance, wheat stem rust produces airborne spores that can travel across continents.
- The scientists further claimed that **practising monoculture** in modern agriculture **had become ideal grounds for fungus to feed on entire crops and breed**. Such cropping patterns have **enabled the fungus to quickly evolve and develop resistance** to the fungicides.
- The **use of antifungals** has spiked in agriculture, **leading to more fungicide resistant** the researchers expressed fears that **increasing temperatures due to global warming will change the relationship between plants and micro biomes**, including the end ophytic fungi and organisms that co-exist in a single host plant.
- However, these can develop into fungi as a response to environmental stresses.
- The fungus can **threaten food security** as the **pressure on food systems increases with the growing human population**. The global population is estimated to grow to 9.7 billion in the next 30 years. Despite the threats, the **researchers hope to battle the situation by moving away from a single-target site fungicide approach to developing compounds that fight multiple pathogens**.

Topic 17. SHRINKING GLACIERS AND EFFECTIVE POLICY-LEVEL COMMUNICATION

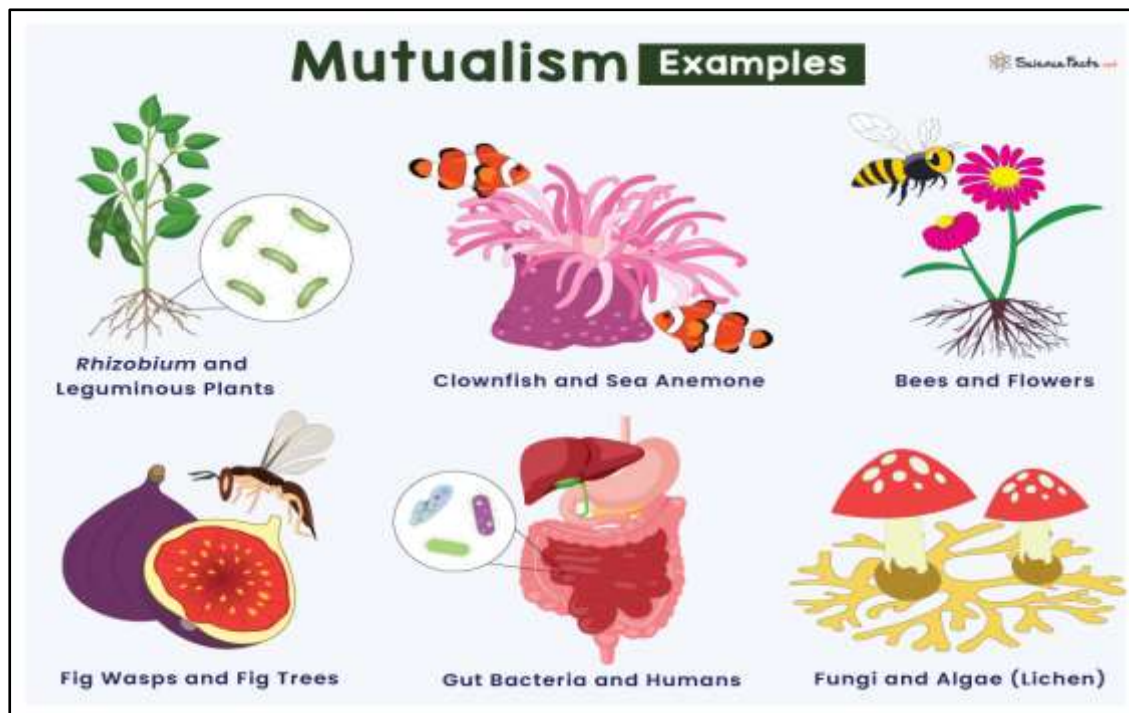
Important for the subject: Environment

Climate change impacts on Indus river basin glaciers. Glaciologist says communicating about the **uncertainties attached to glaciers with policymakers** is one of the most challenging tasks. The remote sensing models developed helps **understand the Himalayan cryosphere and also estimate glacier mass balance.**

- Glaciers in the western Himalayas are “actively under the degradation phase,” as per one of the studies.
- **Glaciers in the Alaknanda and Bhagirathi river** basins in the Western Himalayas where the river Ganga originates. They find that **around 96% of glaciers have continuously lost water** between 2001 and 2013. Their findings strengthen the evidence that Himalayan glaciers are “actively under the degradation phase
- Glaciologist talks about his experiences while studying glaciers, the **state of glaciology in India and the need for revised water sharing practices between India and Pakistan** with the backdrop of melting glaciers in the eastern Himalayas.
- Expert says the findings show the **proportion of water distributed between India and Pakistan will be significantly affected by the middle of the century due to the non-uniform impacts of global warming** in the region.

Topic 18. MUTUALISMS

Important for the subject: Environment



Mutualism, Cooperation and Symbiosis:

Cooperation is a **broad label for beneficial interactions that can exist between two or more individuals of the same species or of different species**. Therefore, mutualism, which refers to the **positive interactions between creatures of different species**, is a subset of the interactions that fall under the ambit of cooperation.

- Symbiosis translates roughly into ‘**life companions**’ and **refers to organisms that live in close contact with each other**. Symbiotic relationship can either be **parasitic** (where **one organism benefits from the association and the other is harmed**), **commensal** (where one benefits, but the other gains no benefit nor is it harmed), or **mutualistic** (where **both organisms benefit** from their interactions).

Examples:

- **Plants rely on pollinators** to ferry pollen between flowers for reproduction. Pollinators receive food (either as nectar or the pollen itself) as a reward for this service.
- Mutualisms are those between **plants and nitrogen-fixing bacteria** (where plants

- provide food and shelter to bacteria that convert atmospheric nitrogen into minerals that plants can absorb)
- **Plants and fungi called mycorrhizae** (where plants provide food and shelter to fungi that help the plants to absorb micronutrients like phosphorous and iron from soil).
 - **Humans and some gut bacteria** such as specific strains of **Escherichia coli** or **E. coli** have mutualistic relationships where the **human provides food and shelter to the bacteria**, which provide their human hosts with **vitamin K and some essential nutrients**.
 - **Ants and termites with fungi**, where the **ants/termites literally cultivate fungi by providing specific fungi with food** (usually cellulose from plant material like wood and leaves) to grow on and **protect the fungi by weeding out or killing off competing fungi**. The fungi, in turn, digest the cellulose and convert it into a form that the ants can eat.
 - Between **ants and aphids**, where ants protect aphids from predators and the aphids reward the ants with drops of sweet sugary liquid called honeydew.
 - Mutualisms between **corals and photosynthetic organisms called zooxanthellae**. The corals provide zooxanthellae with shelter and minerals, while the zooxanthellae provide the corals with oxygen, glucose, glycerol, and amino acids, which are products of photosynthesis.

Topic 19. TROPICAL ‘RUNAWAY GREENHOUSE’ PROVIDES INSIGHT TO VENUS

Important for the subject: Environment

Runaway Greenhouse:

A region in the Western Tropical Pacific Ocean may help scientists understand how Venus lost all of its water and became a 900-degree inferno. The study of this local phenomenon by NASA scientists also should help researchers understand what conditions on Earth might lead to a similar fate here.

- The phenomenon, called the ‘runaway greenhouse’ effect, occurs when a planet absorbs more energy from the sun than it can radiate back to space.
- Under these circumstances, the **hotter the surface temperature gets, the faster it warms up**. Scientists detect the signature of a runaway greenhouse when planetary heat loss begins to drop as surface temperature rises.

- Only one area on Earth – the western Pacific ‘warm pool’ just northeast of Australia – exhibits this signature. Because the warm pool covers only a small fraction of the Earth’s surface, the Earth as a whole never actually ‘runs away.’
- However, scientists believe **Venus did experience a global runaway greenhouse effect about 3 billion to 4 billion years ago.** Scientist used atmospheric conditions above the Pacific Ocean, including data recorded by NASA’s Earth Observing System of satellites, to **create a computer model of the runaway greenhouse effect.** They **determined that water vapor high in the atmosphere** produced the local signature of a runaway greenhouse.
- **At sea surface temperatures above 80 F (27 C), evaporation loads the atmosphere with a critical amount of water vapor,** one of the most efficient greenhouse gases. Water vapor **allows solar radiation from the sun to pass through,** but it **absorbs a large portion of the infrared radiation coming from the Earth.** If enough water vapor enters the troposphere, the weather layer of the atmosphere, it **will trap thermal energy coming from the Earth, increasing the sea surface temperature even further.**
- The effect should **result in a chain reaction loop** where sea surface temperature increases, **leading to increased atmospheric water vapor** that leads to more trapped thermal energy. This would **cause the temperature increase to ‘run away,’** causing more and more water loss through evaporation from the ocean.
- Luckily for Earth, **sea surface temperatures never reach more than about 87 F (30.5 C),** and so the **runaway phenomenon does not occur.**

What is limiting this effect over the warm pool of the Pacific?

- **Cloud cover may affect how much energy reaches or escapes Earth,** or that the ocean and atmosphere may transport trapped energy away from the local hotspot.
- **Water vapor above 5 kilometers (3 miles) altitude in the atmosphere contributes significantly to the runaway greenhouse signature.** Scientist found that **at 9 kilometers (5.6 miles) above the Pacific warm pool, the relative humidity in the atmosphere can be greater than 70 percent** – more than three times the normal range.
- **In nearby regions** of the Pacific where the sea surface temperature is just a few degrees cooler, the **atmospheric relative humidity is only 20 percent.** These **drier regions of the neighboring atmosphere may contribute to stabilizing the local runaway greenhouse effect.**

positive sense, such as to refer to shifts in public opinion in favor of action to mitigate climate change, or the potential for minor policy changes to rapidly accelerate the transition to a green economy.

Topic 21. BLACK TIGER

Important for the subject: Environment

Death of rare black tiger in Odisha's Similipal Tiger Reserve will have big impact on population. The **death of a rare black tiger** reported **after three decades in the Similipal Tiger Reserve** in Odisha's Mayurbhanj district could have a big impact on the population of the animals. The carcass of the melanistic male big cat was found in the core areas of the reserve. Forest officials said it died due to a territorial fight with another male.

Black Tiger:

- They are a **rare color variant** of the tiger and are **not a distinct species or geographic subspecies**. The **abnormally dark or black coat** in such tigers is **termed pseudo melanistic or false colored**.
- The only other black tigers outside of **Similipal in India** exist at the **Nandankanan Zoological Park in Bhubaneswar, Ranchi Zoo and Chennai's Arignar Anna Zoological Park**.
- **Similipal** has the **world's highest rate of black tiger sightings** in the world. The reserve **had last reported eight tigers**, according to the Tiger Status Report 2018.
- The tigers in the Similipal Tiger Reserve are an **isolated population in eastern India and gene flow between them and other tiger populations is very restricted**.

Similipal Tiger Reserve

- Similipal National Park is a national park and a tiger reserve in the **Mayurbhanj district** in the Indian state of Odisha covering 2,750 km² (1,060 sq mi).
- It is **part of the Mayurbhanj Elephant Reserve**, which includes three protected areas — Similipal Tiger Reserve, Hadgarh Wildlife Sanctuary and Kuldiha Wildlife Sanctuary.
- Similipal National Park **derives its name from the abundance of red silk cotton trees** growing in the area. This **protected area is part of the UNESCO World Network of Biosphere Reserves** since 2009.

- Simlipal Elephant Reserve is an ecosystem complete with forest vegetation (mainly sal trees), fauna and the **adjoining Ho / Santhal tribal settlements**. Two tribes, the **Erenga Kharias and the Mankirdias**, inhabit the reserve's forests and practise traditional agricultural activities (the collection of seeds and timber).

Topic 22. BIRTH RATE OF LARGE, MIGRATORY BIRDS DECLINED DUE TO CLIMATE CHANGE

Important for the subject: Environment

Study shows declines in offspring production were observed in relatively large birds & migratory birds.

- Climate change has **reduced the overall birth rate of bird species** across the world, a new study has found. Researchers analyzed 201 wild bird populations from all continents between 1970 and 2019 and found birth rate has declined during recent decades, with great variation among species and populations.
- **Declines in offspring production were observed in relatively large birds and migratory birds**, whereas species whose production increased were small-bodied and sedentary.
- The research suggested that **larger species were more vulnerable to declines in offspring production**. Body mass exceeding one kilogram for sedentary species and 50 grams for migratory species is associated with adverse trends in offspring production.
- **Larger-bodied species may respond slower to changing environmental and climatic conditions due to their lower fecundity (ability to produce young) and extended maturation period.**
- Thus, climate variability is an important factor when **coupled with migratory habits and the number of broods raised in the breeding season.**
- The researchers found that **non-migratory species, especially smaller ones, can usually adjust to changes in local conditions and may benefit from climate warming**. While migratory species, except the smallest, may suffer.
- The study aimed to look at the temporal changes in annual offspring production by female breeders in relation to changes in local temperatures and species' life history traits.

Topic 23. INTERNATIONAL LEOPARD DAY 2023

Important for the subject: Environment

A **new portal** dedicated to leopards (*Panthera pardus*) was launched by the Cape Leopard Trust (CLT), an active predator conservation working group, on International Leopard Day (May 3, 2023) to promote and celebrate leopards worldwide.

- The **launch of the website org** follows the Global Leopard Conference held from March 13-19 by CLT, global wild cat organization Panthera and some other organizations.
- A statement by CLT noted that “despite being a well-known and charismatic species, the **conference presentations and discussion groups overwhelmingly indicated that leopards are still greatly in need of awareness raising, support and investment** — especially considering their ‘Vulnerable’ status as listed by the International Union for Conservation of Nature”.
- In comparison to other large carnivores, leopards are quite adaptable with respect to their habitat needs and food requirements, being found in agro-pastoral landscapes, plantations and near human habitation (both rural and urban).
- Leopards are a species that have never been as well acknowledged and studied as, say, tigers. It is **good that this website has been created. It means there will be more knowledge out there in the public domain.**

Indian Leopard

- The Indian leopard is a leopard subspecies **widely distributed on the Indian subcontinent.**
- It is **one of the big cats** occurring on the Indian subcontinent, apart from the Asiatic lion, Bengal tiger, snow leopard and clouded leopard. Habitat – India, Nepal, Bhutan and parts of Pakistan.
- Leopard is a middle-sized wild cat has a **slim and long body with short, sturdy legs and a long tail**, helping the animal to keep balance when in the trees. Leopards are generally asocial animals, **living solitarily** and avoiding other leopards.
- The leopard is distinguished by its **well-camouflaged fur, opportunistic hunting behavior, broad diet, strength, and its ability to adapt** to a variety of habitats ranging from rainforest to steppe, including arid and montane areas.

Conservation Status:

- It is listed as **Vulnerable** on the IUCN Red List. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): **Appendix I** Wildlife Protection Act 1972: **Schedule 1**

Topic 24. PETERSBERG CLIMATE DIALOGUE***Important for the subject: Environment***

The discussions at the event veered around global renewables target, climate finance and Global Stock take.

Key takeaways from the Peters berg Climate Dialogue:

- Peters berg Dialogue on Climate Change was **held in Berlin** from May 2-3, 2023. It was **hosted by Germany and the United Arab Emirates**, which is **hosting the 28th Conference of Parties (COP28) to the United Nations Framework Convention on Climate Change**.
- **Ministers from 40 countries** attended the conference to discuss the way forward towards COP28.

Acceleration Agenda:

- The goal of the Acceleration Agenda is to hasten countries' **Net Zero targets by requiring the phasing out of coal in OECD nations by 2030 and by 2040 in all other countries**, as well as reaching Net Zero electricity production and decarbonizing major industries.
- **Focused on phasing out fossil fuel emissions**, while phasing up viable, affordable zero-carbon alternatives

Global Stock-take:

- 2023 is the year for the Global Stock-take, which is a **periodic review of global climate action that aims to assess whether current efforts will enable us to reach the objectives set out in the Paris Agreement**. The report has been underway for the past two years and is set to be released in September of 2023.

Climate Finance:

- **Developed countries are on a good track to deliver the \$100 billion per year they had promised to mobilize by 2020 during the COP15 in 2009.**
- However, **providing the pledged \$100 billion by 2023 may not be enough**, as climate finance requirements for emerging markets alone are estimated at \$1 trillion per year by 2030. This indicates that **developed countries have mobilized an amount that is more than ten times smaller than the climate finance needs**, even after committing to the \$100 billion goal for 14 years.

Peters berg Climate Dialogue:

- Peters berg Climate Dialogue is an **annual high-level political dialogue on climate change, co-hosted by Germany and a partner country.**
- The aim of this dialogue is to **promote international climate cooperation and advance discussions** on the implementation of the Paris Agreement.
- The Peters berg Climate Dialogue **was first held in 2010 in the Peters berg Palace near Bonn, Germany.** It was initiated by the German government **after the disappointing outcome of the 2009 United Nations Climate Change**

Conference in Copenhagen.

- The dialogue is an **informal meeting of ministers and high-level representatives** from around 35 countries, including the major emitters of greenhouse gases. The participants discuss key issues related to climate change and **share their perspectives on the implementation of the Paris Agreement.**
- The dialogue is **not a negotiation platform**, but **rather an opportunity for participants to exchange ideas and best practices**, and to build trust and mutual understanding.
- The Peters berg Climate Dialogue is **held annually, usually in May**, and is seen as an important **stepping stone towards the United Nations Climate Change Conference (COP)**, which takes place later in the year. The outcomes of the dialogue are fed into the negotiations at COP.

Topic 25. CREDIT SUISSE-ECUADOR DEAL FOR GALAPAGOS CONSERVATION

Important for the subject: Environment

Ecuador has committed to spending millions of dollars annually for 20 years to protect one of the world's most precious ecosystems, after the Swiss bank bought bonds at less than half of their original value.

- Effectively, Ecuador has now bought its own debt back at a knock-down price via a fresh loan from Credit Suisse.
- And in return, **Ecuador's government had pledged to spend about \$18 million annually for two decades on conservation in the Galapagos Islands.**
- The remote islands — home to some of the most unspoiled nature in the world— are a **UNESCO world nature heritage site**, and their **animal life was crucial to Charles Darwin's research before publishing his theory of evolution.**

About Galapagos Islands

- It is an **archipelago of volcanic islands.**
- It **belongs to the Republic of Ecuador** that lies 926 km to the east. The islands are located in the eastern Pacific Ocean, 973 km off the west coast of South America. They are distributed on **each side of the equator in the Pacific Ocean**, surrounding the center of the Western Hemisphere.
- The islands are located at the **Galapagos Triple Junction**. The Galapagos Triple Junction is a geological area in the eastern Pacific Ocean several hundred miles west of the Galapagos Islands **where three tectonic plates – the Cocos Plate, the Nazca Plate and the Pacific Plate – meet.**
- The archipelago is precisely **located on the Nazca Plate (a tectonic plate)**, which is moving east/southeast, diving under the South American Plate at a rate of about 2.5 inches (6.4 cm) per year. Mount Azul, at 5,541 feet is the highest point of the Galapagos Islands.
- The islands are well known for their **distinctive endemic species, including giant tortoises, finches, flightless cormorants, Galápagos lava lizards and marine iguanas, which evolved to adapt to islands' environments.**

Topic 26. HEALTH DAY AT UPCOMING UN CLIMATE CONFERENCE

Important for the subject: Environment

Health Day at upcoming UN climate conference — a first in COP history Finally heeding to the many versions of the ‘climate change crisis is a public health crisis’ argument made by domain experts, the upcoming 28th Conference of Parties (COP28) to the United Nations Framework Convention on Climate Change will assess health issues in great detail.

- This reverses a historical trend **of health being absent from COP discussions**, despite roughly 189 million people in developing countries being affected by extreme weather events annually since 1991.
- COP28 will be the **first COP to dedicate a day to health** and the **first to host a health and climate ministerial**. And need to **broaden our definition of adaptation to enable global climate resilience, transform food systems and enhance forestry land use and water management**.
- The **COVID-19 pandemic highlighted fissures in the health systems** across the world, which will only widen as the climate change crisis worsens. A warming world will add to the existing high disease burden. This is because **increased disasters like heat waves, floods and droughts will lead to more illnesses** while an **increase in temperature will allow for vector-borne diseases** to survive at higher latitudes and thereby impact a greater population.
- Health **received some attention at COP 27 held in Egypt** last year when conference resolutions referred to the need for governments’ climate action to respect, promote, and consider their respective obligations on human rights, including the right to highest attainable standard of physical and mental health.
- In 2021, the **WHO joined hands with the United Kingdom COP26 presidency** and **established the Alliance for Transformative Action on Climate and Health**, which had 60 countries as signatories.

Alliance for Transformative Action on Climate and Health

- Alliance for Transformative Action on Climate and Health (ATACH) **works to realize the ambition set at COP26 to build climate resilient and sustainable health systems, using the collective power of WHO Member States** (“Member States”) and other

stakeholders to drive this agenda forward at pace and scale; and promote the integration of climate change and health nexus into respective national, regional, and global plans.

Four thematic working groups will work to address common issues:

- **Financing the Health Commitments** on Climate Resilient and Sustainable Low Carbon Health Systems.

Climate Resilient Health Systems.

Low Carbon Sustainable Health Systems.

Supply chains.

Functions of the ATACH

- **Delivering international shift on priority issues:** This function focuses on areas where a global shift can be delivered through the collective power of Member States and other stakeholders, as appropriate. It **reflects collective interest of the Alliance as well as context specific themes** which may be more applicable to smaller groupings of Member States.
- **Monitoring:** Support WHO, in its efforts to collect data on country level progress against the commitments made.
- **Quality Assurance:** Support WHO in **developing quality assurance mechanisms designed to help ensure that assessments, plans, and implementation** are of the quality required to deliver on commitments made thereby facilitating a common understanding of such commitments and measures of progress. The core aim is to help identify where support is required and to identify best practice.
- **Financing:** This focuses on **identifying financing needs, and support Member State access to finance, including climate finance**, in a timely and sustainable way. This information also feeds into the monitoring function, tracking the performance of both domestic as well as donor/ development finance agencies in making funding available to meet Member State commitment needs.
- **Knowledge sharing and coordinating access to technical assistance:** This function provides a forum for Alliance Participants to share expertise, knowledge and experience on the assessment, planning implementation, financing, and monitoring of commitments.

This supports exchange among Participants and access to information to support evidence based and cost-effective delivery of commitments.

Topic 27. BASTILLE DAY PARADE

Important for the subject: International Relations

Prime Minister Narendra Modi will visit France on 14th of July to attend this year's Bastille Day Parade as Guest of Honor in Paris.

France's Bastille Day parade

July 14 is marked as France's National Day.

- One of the revolutionary days in Paris and now a national holiday, the **July 14 ("Bastille Day")** is celebrated with a mixture of solemn military parades and easygoing dancing and fireworks.
- The **storming of the Bastille on July 14, 1789** has been commemorated in France for **more than a century**. Every Bastille Day, Paris' famous avenue des Champs-Élysées hosts a **military parade – similar to India's Republic Day parade on Kartavya Path**.
- French heads of state have been the Republic Day guests of honor five times since 1951. Prime Minister Narendra Modi will be the 2nd Indian PM to be the guest of honor at Bastille Day, after Man Mohan Singh in 2009.

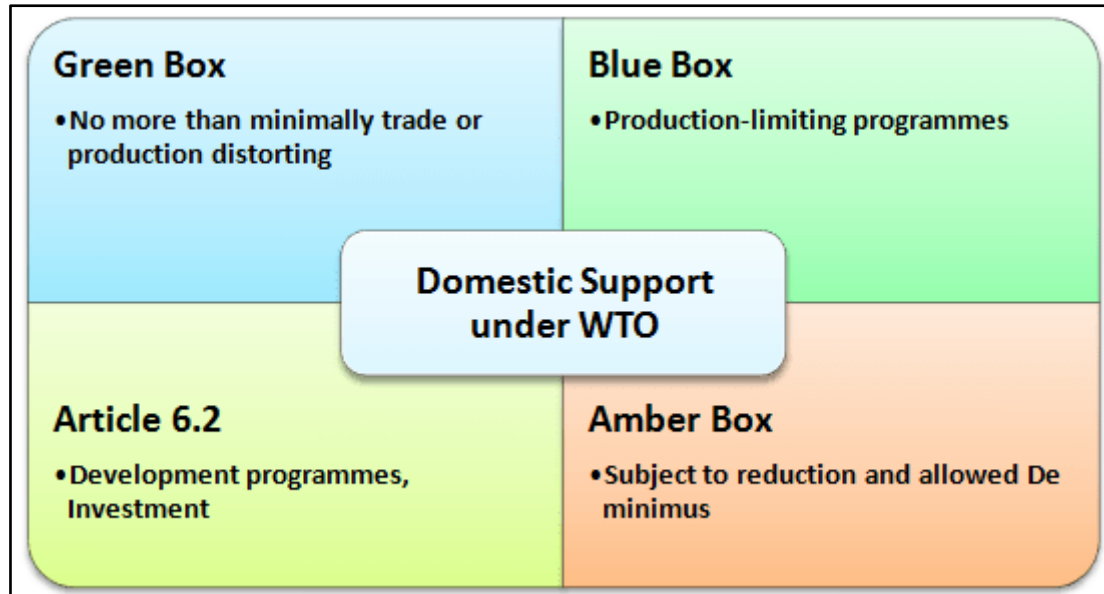
About France

- It is the **largest country in Western Europe**. It spans Western Europe and overseas regions and territories in the Americas and the Atlantic, Pacific and Indian Oceans.
- France shares borders with **Belgium, Luxembourg, Germany, Switzerland, Monaco, Italy, Andorra, and Spain in Europe**, as well as the Netherlands, Suriname, and **Brazil in the Americas via its overseas territory in French Guiana**.
- Its overseas territories include **French Guiana in South America, Saint Pierre and Miquelon in the North Atlantic, the French West Indies, and many islands in Oceania and the Indian Ocean**.
- Major mountain ranges: **Alps, Pyrenees, Massif Central** Major rivers: **Seine, Rhine and Rhône**

Topic 28. WTO NEEDS TO LOOK AT FARM SUBSIDY ISSUE WITH OPEN MIND:

FM

Important for the subject: International relations



Speaking at the Asian Development Bank (ADB) Governor’s seminar on ‘Policies to support Asia’s rebound’ FM said that the World Trade Organization (WTO) should look at the issue of farm subsidies with an open mind as it impacts the food security needs of emerging economies in the backdrop of COVID19 and the Russia.

Agri Subsidies and WTO

- In WTO terminology, subsidies in general are identified by “boxes” which are given the colors of traffic lights: green (permitted), amber (slow down — i.e. need to be reduced), red (forbidden).
- The Agriculture Agreement has no red box, although domestic support exceeding the reduction commitment levels in the amber box is prohibited; and there is a blue box for subsidies that are tied to program that limit production.
- There are also exemptions for developing countries (sometimes called an “S&D box” or “development box“, including provisions in Article 6.2 of the Agreement).

Amber box

- Nearly all domestic support measures **considered to distort production and trade** (with

some exceptions) fall into the amber box, which is defined in Article 6 of the Agriculture Agreement as all domestic supports except those in the blue and green boxes.

- These include measures to **support prices, or subsidies** directly related to production quantities. These supports are **Important for the subject to limits**. “**De minimis**” minimal supports for both product-specific and non-product-specific support are allowed, defined as a share of the value of agricultural production.
- This threshold is generally 5% of the value of agricultural production for developed countries, 10% for most developing countries — although some WTO members agreed to a different level when they negotiated to join the WTO.
- Furthermore, 32 WTO members with larger subsidies than the de minimis levels at the beginning of the post-Uruguay Round reform period committed to reducing these support levels.
- The reduction commitments are expressed in terms of a “**Total Aggregate Measurement of Support**” (**Total AMS**) which includes all supports for specified products together with supports that are not for specific products, in one single figure. In the Agriculture Agreement, AMS is defined in Article 1 and Annexes 3 and 4.

Blue box

- This is the “**amber box with conditions**” — conditions designed to reduce distortion.
- Any support that would normally be in the amber box, is placed in the blue box if the support also requires farmers to limit production (details set out in Paragraph 5 of Article 6 of the Agriculture Agreement).
- At present there are no limits on spending on blue box subsidies.

Green box

The green box is defined in Annex 2 of the Agriculture Agreement. In order to qualify, **green box subsidies must not distort trade**, or at most cause minimal distortion.

- They have to be government-funded (not by charging consumers higher prices) and must not involve price support.
- They tend to be program that are not targeted at particular products, and include direct income supports for farmers that are not related to (are “decoupled” from) current production levels or prices.

- They also include environmental protection and regional development program. “Green box” subsidies are therefore allowed without limits, provided they comply with the policy-specific criteria set out in Annex 2.

Development Box

- Article 6.2 of the Agriculture Agreement allows **developing countries additional flexibilities in providing domestic support.**
- The type of support that fits into the developmental category are measures of assistance, whether direct or indirect, designed to encourage agricultural and rural development and that are an integral part of the development program of developing countries.
- They include investment subsidies which are generally available to agriculture in developing country members, agricultural input subsidies generally available to low income or resource-poor producers in developing country members, and domestic support to producers in developing country members to encourage diversification from growing illicit narcotic crops.

De minimis

- The World Trade Organization (WTO) defines de minimis as the “minimal amounts of domestic support that are allowed even though they distort trade — up to 5% of the value of production for developed countries, 10% for developing”.

Agreement on Subsidies and Countervailing Measures (SCM)

- The WTO Agreement on Subsidies and Countervailing Measures disciplines the use of subsidies, and it regulates the actions countries can take to counter the effects of subsidies.
- Under the agreement, a country can use the WTO’s dispute-settlement procedure to seek the withdrawal of the subsidy or the removal of its adverse effects. Or the country can launch its own investigation and ultimately charge extra duty (“countervailing duty”) on subsidized imports that are found to be hurting domestic producers.
- All countries that become members of the WTO will automatically be Important for the subject to the Subsidies Agreement

Topic 29. WASHINGTON DECLARATION

Important for the subject: International Relations

South Korean President Yoon Suk Yeol arrived in the U.S. to commemorate the 70th anniversary of U.S.-South Korea bilateral relations. A highlight of the visit was the **signing of the “Washington Declaration” as a nuclear deterrence strategy.**

Background

- The successful launch of North Korea’s Hwasong-8 solid-fuel intercontinental ballistic missile (ICBM), a vital component for nuclear weapons delivery.

About Washington Declaration

- The agreement outlines cooperation towards deterrence. An **American nuclear ballistic submarine would be deployed in the Korean peninsula.** A nuclear consultative group would be formed to formulate principles of joint response tactics.
- **South Korea would receive Intel from the U.S. regarding nuclear advancement. Will strengthen South Korea’s nuclear deterrence capabilities** through joint military training programs and an annual intergovernmental simulation.
- The **declaration reaffirmed the non-proliferation Treaty.**

How does it help US?

- The U.S. is hoping to make North Korea unarm itself by unarming South Korea.
- North Korea creates “deterrence dilemmas for the United States and its Allies and partners,” and “a crisis or conflict on the Korean Peninsula could involve a number of nuclear-armed actors, raising the risk of broader conflict.” Finally, the U.S. wants to control global nuclear arms production.

Challenges

- While the aim is to defuse the threat, physical deployment of the arsenal can be deemed as a direct threat by opposing actors and used as leverage to act aggressively.
- China criticized the agreement saying that it provokes confrontation between camps, undermines the nuclear non-proliferation regime and the strategic interests of other countries.

- North Korea warned that the declaration would, “only result in making peace and security of North-East Asia and the world be exposed to more serious danger.”

Topic 30. INDIA TO BUILD HARBOUR FOR MALDIVIAN COAST GUARDS

Important for the subject: International Relations

The Indian Defence Minister and his Maldivian counterpart laid the foundation for “EkathaHarbor”.

About EkathaHarbour

- **EkathaHarbour** is being **constructed in the Maldives for the Maldives National Defence Forces Coast Guard**. The Harbour is being **constructed at Sifavaru in Uthuru ThilaFalhu (UTF) atoll**.
- 6/13 India is assisting the construction of the naval dockyard and it is regarded as one of the biggest grant-in-aid projects of India.
- The Indian Defense Minister also Maldives National Defence Forces Coast Guard an additional Landing Craft **in line with India’s vision of Security and Growth for All in the Region (SAGAR)**.
- **Maldives is said to be one of India’s crucial maritime neighbors in the Indian Ocean Region (IOR)** and the Indian government is looking to expand ties with Male in areas of defense and security amid China’s efforts to expand its influence in the region.
- The Ministers further have agreed to explore additional avenues for cooperation, including in the areas of defense trade, capacity building and joint exercises.

Topic 31. INDIA SLIPS TO 161 ON WORLD PRESS FREEDOM INDEX

Important for the subject: International Relations

INDEX 2023		INDEX 2022	
161 / 180	Score : 36.62	150 / 180	Score : 41
POLITICAL INDICATOR	169 33.65	POLITICAL INDICATOR	145 40.76
ECONOMIC INDICATOR	155 34.15	ECONOMIC INDICATOR	149 30.36
LEGISLATIVE INDICATOR	144 42.92	LEGISLATIVE INDICATOR	120 57.02
SOCIAL INDICATOR	143 45.27	SOCIAL INDICATOR	127 56.25
SECURITY INDICATOR	172 27.12	SECURITY INDICATOR	163 20.61

India's ranking has fallen to 161 in the World Press Freedom Index-2023 in the list of 180 countries. In 2021, India's ranking was 150, down from a ranking of 142 on the press freedom index.

Key Findings of the Report

- **Toppers:** Norway, Ireland, Denmark, Sweden, Finland, Netherlands, Lithuania, Estonia, Portugal and Timor-Leste occupy the top 10 ranks in the World Press Freedom Index 2023.
- **India's neighbors:** The relative rankings of some countries — Pakistan rose up seven ranks and was placed at 150th, and Afghanistan was ranked 152nd.
- The **World Press Freedom Index** revealed that press freedom in 31 is in a “very serious situation”. Two years ago, the number was 21 countries.

About the Report

- The **World Press Freedom Index Report** is an annual report. It is published by **Reporters without Borders**, a non-governmental organization that advocates for

freedom of the press worldwide.

- The **report ranks 180 countries based on their level of press freedom**, taking into account factors such as censorship, media independence, and the safety of journalists.
- The **World Press Freedom Index** is based on **five different factors** that are used to calculate scores and rank countries.

These five sub-indicators include the:

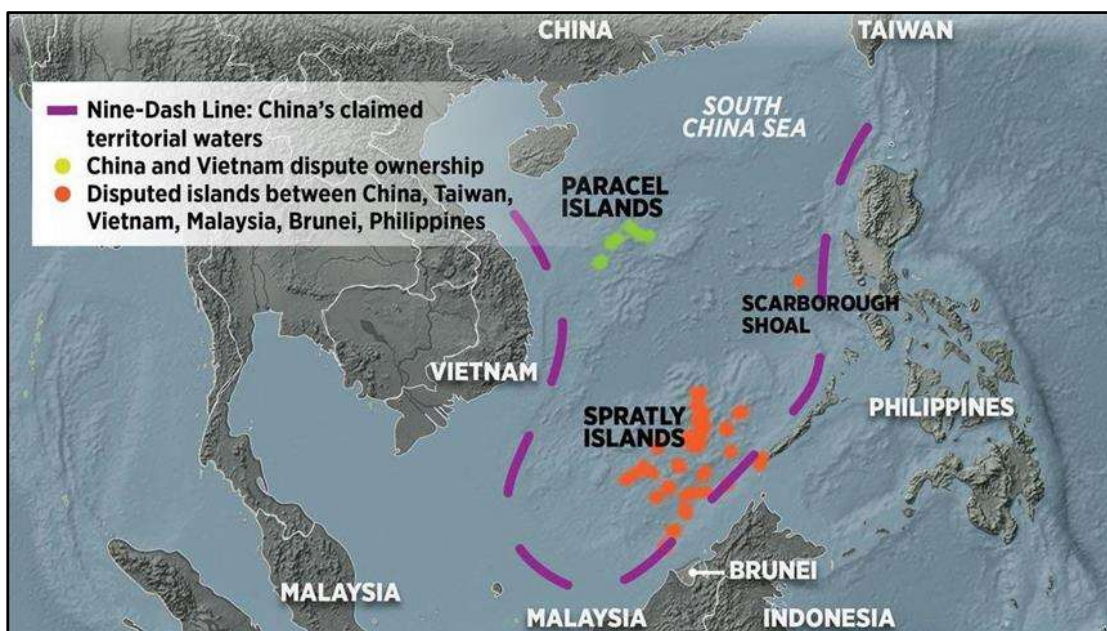
- Political indicator
- Economic indicator
- Legislative indicator
- Social indicator
- Security indicator

About RSF

- **Reporters without Borders** is an **international NGO** whose self-proclaimed aim is to **defend and promote media freedom**. Headquartered in Paris, it has **consultative status with the United Nations**.

Topic 32. ASEAN INDIA MARITIME EXERCISE

Important for the subject: International Relations



The **ASEAN-India Maritime Exercise (AIME-2023)** is an exercise between **Indian Navy and ASEAN navies**. The **inaugural edition of the ASEAN-India Maritime Exercise (AIME-2023)** is being held in **Aim:** To work closely with each other and conduct seamless operations in the maritime domain.

Participating Ships:

- INS Delhi is India's first indigenously-built guided missile destroyer. INS Satpura is an indigenously-built guided missile stealth frigate. Both the ships are part of the navy's Eastern Fleet based in Visakhapatnam.
- The ships will also participate in International Maritime Defence Exhibition (IMDEX- 23) and International Maritime Security Conference (IMSC) being hosted by Singapore.

Significance:

- With AIME-2023 **India becomes the 4th ASEAN dialogue partner, after Russia, China and the US to hold the ASEAN+1 maritime exercise** in which navies of the Philippines, Cambodia, Myanmar, Malaysia, Singapore, Indonesia, Thailand, Vietnam, Laos, and Brunei.

Topic 33. RAJNATH TO HAND OVER PATROL VESSEL, LANDING CRAFT TO MALDIVES

Important for the subject: International Relations

Defence minister of India Rajnath Singh is on a visit to the Maldives from May 1 to 3, 2023 to hold talks with the top leadership of Maldives on various fronts. In line with India's commitment to capacity building of friendly countries and partners in the region, **he is expected to hand over one fast patrol vessel and a landing craft to the Maldives National Defence Forces.**

- India's decision to provide the military platforms to the Maldives came amid China's persistent efforts to expand its overall influence in the region.
- In recent years, India's relationship with the Maldives, particularly in the areas of defence and security, has been improving, as the Maldives is an important maritime neighbor for India in the Indian Ocean region.
- **India's vision of SAGAR (Security and Growth for All in the Region) along with its**

‘Neighborhood First’ policy as well as Maldives’ ‘India First’ policy seek to work together to jointly develop the capabilities within the Indian Ocean region.

SAGAR (Security and Growth for All in the Region)

- In 2015, India unveiled its **Strategic vision for the Indian Ocean i.e. Security and Growth for All in the Region (SAGAR)**. It is an increasing recognition of the increasing importance of maritime security, maritime commons and cooperation.
- Through SAGAR, India **seeks to deepen economic and security cooperation with its maritime neighbors and assist in building their maritime security capabilities**.
- For this, India would cooperate on the exchange of information, coastal surveillance, building of infrastructure and strengthening their capabilities.
- Further, **India seeks to safeguard its national interests and ensure Indian Ocean region to become inclusive, collaborative and respect international law**.

Topic 34. DAMASCUS

Important for the subject: International Relations



According to reports, **Iran’s president Ibrahim Raisi will travel to Syria**. Since the beginning of Syria’s Civil War in 2011, this will be the first tour of this kind. The two-day visit takes place against the backdrop of improved relations between **regional rivals Iran**

and Saudi Arabia as well as growing Arab engagement with Damascus.

Damascus

- It is the **capital of Syria**, the **oldest capital in the world** and, according to some, the fourth holiest city in Islam. Situated in southwestern Syria, Damascus is the center of a large metropolitan area.
- It is nestled among **the eastern foothills of the Anti-Lebanon mountain** range 80 kilometers inland **from the eastern shore of the Mediterranean on a plateau** 680 meters (2,230 ft) above sea level.
- Damascus **experiences a dry climate because of the rain shadow effect**. The **Barada River flows through Damascus**.

Topic 35. PREVENTION OF SEXUAL HARASSMENT (POSH) ACT 2013

Important for the subject: Polity

Half of India's national sports federations don't have a sexual harassment panel, as required by **the Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013**.

- According to a study, half of India's national sports federations do not have a sexual harassment tribunal as the law requires.
- This violates the **Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act of 2013**, which requires **every firm with more than ten workers to create an internal complaints commission (ICC) to handle sexual harassment allegation**.

Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act of 2013

- The Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, often known as the Po SH Act, was passed in 2013. The Act defines sexual harassment as any unwelcome act or behavior (whether directly or by implication) such as;
 1. Physical contact and advances
 2. A demand or request for sexual favors

3. Making sexually colored remarks
4. Showing pornography
5. Any other unwelcome physical, verbal or non-verbal conduct of sexual nature.
6. The Act provides a mechanism for the prevention, prohibition, and redressal of complaints of sexual harassment in the workplace.

Key Provisions

- The Act **covers both organized and unorganized sectors, and applies to all women**, irrespective of their age or employment status.
- Domestic workers, students, research scholars, patients, customers, clients, and tourists are also included. Offices, factories, stores, hotels, restaurants, educational institutions, hospitals, sports facilities, transportation services, entertainment venues, and houses are all covered by the Act.

Internal Complaints Committee (ICC)

- Every employer is required to constitute an **Internal Complaints Committee (ICC) at each office or branch with 10 or more employees. At least one-half of the members of the ICC should be women.**
- The ICC is made up of a **presiding officer** (a senior woman employee), **two other workers** (ideally committed to women's rights), and **one external member** (from an NGO or legal background).
- The ICC is in charge of receiving and investigating complaints of sexual harassment from female employees and proposing appropriate action to the employer.

Local Complaints Committee (LCC)

- The Act also provides for the **constitution of a Local Complaints Committee (LCC) by the District Officer** for cases where the **complaint is against the employer or where the workplace has less than 10 workers.**
- According to law, a **Company having more than 10 employees is mandated to constitute an Internal Complaints Committee (ICC).** For a company having less than **10 employees, it is not mandatory to have ICC.**
- Any woman who has been subjected to sexual harassment at the workplace can file a complaint within 3 months of the incident or series of incidents to

the ICC or LCC, as applicable. The LCC has the same powers and functions as the ICC.

Investigation and Action

- The ICC or LCC is required to **complete the inquiry into the complaint within 90 days** and submit a report with its recommendations to the employer or district officer.
- The **employer or district officer is required to take action on the recommendations of the ICC or LCC within 60 days** and inform the complainant and respondent about it.

Protection against false Complaints

- The Act provides for penalties for false or malicious complaints, non-compliance with the provisions of the Act by the employer or ICC or LCC members, and victimization or retaliation against the complainant or witness.

Topic 36. MODEL CODE OF CONDUCT (MCC)

Important for the subject: Polity

Why in News?

Taking note of the plummeting levels of discourse in the Karnataka Assembly election campaign, the Election Commission (EC) issued an advisory to all recognized national and state parties to maintain “the expected level of dignity”, particularly with respect to their designated star campaigners.

What is MCC?

- The MCC is a **set of guidelines issued by the Election Commission (EC)** to regulate political parties and candidates prior to elections. Basically, the code spells out the do's and don'ts for elections.
- This is in keeping with Article 324 of the Constitution, which mandates EC to conduct free and fair elections to the Parliament and State Legislatures.
- It is **not statutory** but Political Parties, Candidates and Polling Agents are expected to observe the norms, on matters ranging from the content of election manifestos, speeches and processions, to general conduct etc.
- The code comes into force on the announcement of the poll schedule and remains operational till the process is concluded.

- The EC has devised several mechanisms to take note of the violation of the code, which include joint task forces of enforcement agencies and flying squads.

Legal Enforcement

- Though MCC does not have any statutory backing, but the Code has come to acquire teeth in the past decade because of its strict enforcement by the EC.
- Certain provisions of the MCC may be enforced through invoking corresponding provisions in other statutes such as the Indian Penal Code, 1860, Code of Criminal Procedure, 1973, and Representation of the People Act, 1951. In 2013, the Standing Committee on Personnel, Public Grievances, Law and Justice, recommended making the model code of conduct legally binding. It recommended that the MCC be made a part of the Representation of the People Act, 1951.
- **The EC argues against making it legally binding.** According to it, elections must be completed within a relatively short time or close to 45 days, and judicial proceedings typically take longer, therefore it is not feasible to make it enforceable by law.

Some of the Provisions of MCC

Prohibitions

- Criticism of political parties must be limited to their policies and programs, past record, and work.
- Activities such as using caste and communal feelings to secure votes, criticizing candidates on the basis of unverified reports, bribing or intimidation of voters, etc. are prohibited.

Star Campaigners

- A star campaigner is a celebrity vote seeker in an election for a party. This person can be anyone, a politician or even a film star. A ‘recognized’ National or State party declared as such by the ECI can nominate a maximum of 40 star campaigners. An unrecognized political party can nominate a maximum of 20 star campaigners.
- The ECI keeps a tab on expenditure incurred by individual candidates during campaign – Rs. 70 lakh for most states in one constituency by each candidate.
- Expenditure incurred on electioneering by the star campaigner is not added to a

candidate's poll expenditure giving him/her more scope for expenditure. According to the Representation of People's Act, 1951 these expenses will be borne by the political parties.

- However, for an individual candidate to get relief from campaign expenditure, the star campaigner has to limit oneself to general campaigning for the party. EC also advised the parties and their candidates to exercise caution and restraint in their utterances.

IPC Provisions

- Section 499 – Against Defamation
- Section 191 – Giving False Statement or evidence
- Section 300 and 352 – Provocation
- Section 504 – breaking public peace

Topic 37. LIFE OF 6000 VILLAGERS SET TO IMPROVE IN ODISHA

Important for the subject: Polity

Over 6,000 villagers who lived devoid of essential government welfare schemes and developmental benefits for decades deep inside forests in Odisha's Ganjam district are set to **embrace a new life with the recognition of their villages as revenue villages under the Forest Right Act.**

These people were part of 38 un-surveyed forest villages and for every small developmental activity, they required permission from the forest department. In the **census report, these villages are identified as 'Zero' villages, but inhabited by people.**

Revenue Villages under FRA

- Under **Section 3(1) (h) of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006**, the rights of settlement and conversion of all forest villages, old habitations, un-surveyed villages and other villages in forest, whether recorded, notified, or not, **into revenue villages have been recognized as one of the forest rights of forest dwelling Scheduled**

Tribes and other traditional forest dwellers on all forest lands.

- As per the provisions of the Act and the rules framed thereunder, **the forest right related to conversion of forest villages into revenue villages is to be adjudicated by the Gram**

Sabha, Sub-Divisional Level Committee and the District Level Committee as per the laid down procedure, like any other forest right specified in the Act.

- The Ministry of Tribal Affairs has issued guidelines to the State/ UT Governments to **convert all such erstwhile forest villages, un-recorded settlements and old habitations into revenue villages with a sense of urgency in a time bound manner.**
- The conversion would include the actual land use of the village in its entirety, including land required for current or future community uses, like, schools, health facilities, public spaces etc.

Topic 38. SCHEDULED TRIBE STATUS FOR THE MEITEI COMMUNITY

Important for the subject: Polity

Members of the Meitei community in Manipur, which has been seeking Scheduled Tribe status for decades, have now said that **they intend to file contempt proceedings against the Hill Areas Committee (HAC) of the Manipur Legislative Assembly**, which recently passed a resolution opposing their inclusion.

What is the issue?

- The Manipur High Court recently directed the state government to consider a demand to include the Meitei community in the Scheduled Tribes list. The order revived old anxieties and further widened ethnic fault lines in the state.

Hill Areas Committee (HAC) of the Manipur Legislative Assembly

- The HAC was set up through a 1972 order and comprises legislators of all constituencies that fall partly or wholly within the State's hilly areas. The **tribal hill districts of Manipur enjoy special protections under Article 371C** of the Constitution, which says that all laws affecting the districts must be vetted by the hill areas committee of the Manipur Legislative Assembly.

Major tribes of Manipur

- **Naga and Kuki**: Manipur's two major tribal communities – **Naga and Kuki** – live in the hill districts, which account for about 90% of the state's area.
- But these 10 districts send only 20 legislators to the 60-member legislative assembly

since they are more sparsely populated than the Valley.

Meiteis: The Meiteis, who account for 60% of the state's population, are largely concentrated in the Imphal Valley.

Points made by Meitei Community

- The community, through the Scheduled Tribe Demand Committee, Manipur, has been demanding ST status for decades now.
- They argue that they had been **listed as one of the tribes of Manipur before it merged with India in 1949 but that they lost this tag when the Constitution (Scheduled Tribes) Order, 1950 was drafted.**
- Claiming that they had thus been left out of the ST list, they had persisted with their demands.

Analyzing protection given to Meitei Community

- The Meitei community, a **majority of whom follow Hinduism**, is already protected under the Constitution.
- **Most of them are categorized either as Other Backward Classes or Scheduled Castes.**
- **The upper castes among them are also entitled to reservation under the economically weaker section (EWS) quota.**

Topic 39. DEFAULT BAIL EVEN IF CHARGE SHEET HAS NO VALID SANCTION: **SC**

Important for the subject: Polity

Supreme Court held that **accused persons would not be entitled to default bail on the ground that the charge sheet filed against them is without the sanction of valid authority. The court held that a charge sheet filed without a valid sanction could not be considered an incomplete charge sheet if it was filed well within the time.**

Background

- **Section 167 of Cr PC provides for default bail** and permits the release of an accused person on bail if the investigation against them is not completed within requisite time.
- The court was hearing appeals against an order of the Punjab and Haryana High Court

that refused to release them on default bail under Section 167(2) of Cr PC.

About Default Bail:

- This is a **right to bail that accrues when the police fail to complete investigation within a specified period** in respect of a person in judicial custody. It is also **known as statutory bail**.
- This is **enshrined in Section 167(2) of the Code of Criminal Procedure**.

Supreme Court Judgment:

- In **Bikramjit Singh case 2020**, the Supreme Court had observed that the accused gets an **indefeasible right to 'default bail'** if he makes an application after the maximum period for investigation of an offence is over, and before a charge sheet is filed.
- **Right to default bail under Section 167(2), Cr PC not merely a statutory right, but part of procedure established by law under Article 21.**

Underlying Principle:

- In general, the right to bail on the investigation agency's default is considered an **'indefeasible right'**, but it should be availed of at the appropriate time.

Default bail is a right, regardless of the nature of the crime.

- The **stipulated period within which the charge sheet has to be filed begins from the day the accused is remanded for the first time.**
- **Under Section 173 of Cr PC, the police officer is obligated to file a report after the completion of the necessary investigation of an offence. This report is called the Charge Sheet in common parlance.**

Time Period:

- The issue of default bail **arises where it is not possible for the police to complete an investigation in 24 hours, the police produce the suspect in court and seek orders for either police or judicial custody.**
- For most offences, **the police have 60 days to complete the investigation and file a final report before the court.**
- However, **where the offence attracts death sentence or life imprisonment, or a jail**

term of not less than 10 years, the period available is 90 days.

- In other words, a **magistrate cannot authorize a person's judicial remand beyond the 60-or 90-day limit**. At the end of this period, if the **investigation is not complete**, the court shall release the person **“if he is prepared to and does furnish bail”**.

Special Cases:

- The **60- or 90-day limit is only for ordinary penal law**. Special enactments allow **greater latitude to the police for completing the probe**.
- In the **Narcotic Drugs and Psychotropic Substances Act 1985**, the period is 180 days, which can be extended up to one year.
- In the **Unlawful Activities (Prevention) Act 1967**, the **default limit is 90 days only**, which can be **extended to another 90 days**.
- This **extension can be granted only on a report by the Public Prosecutor** indicating the progress made in the investigation and giving reasons to keep the accused in continued detention.
- These provisions show that the **extension of time is not automatic but requires a judicial order**.

Topic 40. ARTICLE 142

Important for the subject: Polity

Why in News?

A five-judge Constitution Bench of the Supreme Court ruled that it can exercise its plenary power to do “complete justice” under Article 142, to directly grant divorce to couples.

What is Article 142?

- Article 142 provides **discretionary power to the Supreme Court (SC)**. Subsection 1 of Article 142 states that the SC in the exercise of its jurisdiction may pass such decree or make such order as is necessary for doing **complete justice** in any cause or matter pending before it. Any decree so passed or order so made shall be enforceable throughout the territory of India.
- If at times law or statute did not provide a remedy, the Court can extend itself to put an end to a dispute in a befitting manner.

- An order to do complete justice must be **consistent with the fundamental rights** and **cannot be inconsistent with the substantive provisions of the relevant statutory laws**.
- Used in judgements related to cleaning of Taj-Mahal, release of A.G. Perarivalan, Bhopal gas tragedy case, etc.

Current Procedure for Divorce

- Governed by the Hindu Marriage Act (HMA), 1955– “divorce by mutual consent”.
- **Section 13B of the HMA – First petition** to be filed to the **district court** on the ground of living separately for 1 year or more, unable to live together and mutually consenting for dissolution of marriage.
- **Section 13B (2) of the HMA – Second motion** to be filed by the parties before the court – **between 6 and 18 months** of presenting first petition. First petition not withdrawn in the meantime. The mandatory **6 month wait** – intended to give **time to withdraw** the plea.
- Court will pass a decree of divorce, if it’s satisfied, after proper hearing of parties and inquiry.
- **Section 14 of HMA** – divorce petition can be moved **sooner than mandatory 1 year** period after marriage due **exceptional hardship** of petitioner or **exceptionally bad moral** of the partner. **6 months** cooling-off period for getting decree of divorce can be **waived off** in this case.

Conditions for using Article 142 for divorce cases

- A person **cannot directly approach the SC and seek dissolution of marriage** on the ground irretrievable breakdown. It can be used only as a remedy for a competent court’s judgement. Writ jurisdiction under **Articles 32 and 226 cannot be used** to circumvent due procedure.
- The decision to exercise the power under Article 142(1) should be **based on** considerations of **fundamental general conditions of public policy** and **specific public policy**. The fundamental general conditions of public policy include fundamental rights, secularism, federalism and other basic features of Constitution.
- The specific public policy was defined by the court to mean “some express preeminent prohibition in any substantive law.”

Article 32 – right to constitutional remedy

- It is a **fundamental right**, stating that individuals have the right to approach the SC to seek enforcement of other fundamental rights guaranteed by the Constitution.
- The SC has power to issue directions or orders or **writs** including **habeas corpus, mandamus, prohibition, certiorari and quo-warranto** for enforcing any of the fundamental rights.
- This is an **original but not exclusive** jurisdiction of SC. It is **concurrent** with high court's jurisdiction under **Article 226**.

Article 226

- Not a fundamental right but a **constitutional right** that empowers a **High Court (HC)** to issue writs including habeas corpus, mandamus, certiorari, prohibition and quo warranto, for enforcing any of the fundamental rights or for any other purpose. For any other purpose means – **enforcing ordinary legal right** also. So HC has **wider writ jurisdiction than SC**.

Consequences of the Judgement

- SC is not bound by the procedural requirement to move the second motion.
- SC can waive off the 6 month mandatory wait for getting a divorce decree in exceptional case of irretrievable breakdown of marriage.

Factors to decide Irretrievable Breakdown of Marriage

SC determined the following factors

- The period of time that the parties had cohabited after marriage; When the parties had last cohabited; Nature of allegations made by the parties against each other and their family members; Orders passed in the legal proceedings from time to time; Cumulative impact on the personal relationship;
- Whether, and how many attempts were made to settle the disputes by a court or through mediation, and when the last attempt was made.

Topic 41. ALTERNATIVE TO DEATH BY HANGING

Important for the subject: Polity

In the Supreme Court, the Union Government stated that it is considering the **formation of a committee to investigate the need for a painless and more dignified alternative to death by hanging.**

This move could potentially end the barbaric and inhuman practice of executing death row convicts by hanging them by the neck until they are dead. **Hanging is not only cruel and painful, but also violates the fundamental right to life and dignity of the condemned prisoners.** Hanging as a **mode of execution has been challenged several times in the past** because it is **inconsistent with Article 21 of the Constitution**, which guarantees the right to life and personal liberty.

Background of the Present Context

- A petition was filed in the Supreme Court seeking to abolish hanging and adopt other methods such as lethal injection or electrocution, which he claimed are comparatively less painful and more humane.
- **The Supreme Court, in March 2023, directed the Centre to gather information on the less painful modes of execution than hanging by the neck in death sentence cases in the country.**
- The court also suggested that the Centre could set up an expert panel to examine the issue from the standpoint of science and technology and find an approach that is both humane and socially acceptable.

Alternatives for death by hanging

- Alternatives for death by hanging are **lethal injection, firing squad and electrocution.** These **methods are used in some other countries that still retain capital punishment.** However, each of these methods has its drawbacks and controversies.
- A **lethal injection** may cause severe pain and suffering if the drugs are not administered properly or if the prisoner has a medical condition that affects the effectiveness of the drugs.
- A **firing squad** may result in a prolonged and bloody death if the shooters miss the vital

organs or if there are multiple rounds of firing.

- **Electrocution** may cause severe burns, mutilation and disfigurement of the body. Therefore, **there is no clear consensus on which method of execution is the most humane and dignified.**

Topic 42. A GOOD DIVORCE: SC RULING

Important for the subject: Polity

The Supreme Court's (SC) ruling on divorce matters on 1st May 2023 is seen as a good move to opt out of a bad marriage. The **Supreme Court of India has invoked its extraordinary powers under Article 142** of the Constitution to **grant divorce by mutual consent to couples trapped in bitter marriages, without making them wait for the mandatory cooling-off period of six to 18 months prescribed by law.**

It should be **noted that according to Section 13B of the Hindu Marriage Act, 1955, a couple has to wait for 6 to 18 months for a local court to annul the marriage.**

Highlights of the Supreme Court Observation

- The court observed that **there is no point in compelling the parties to go through the futile exercise of filing a petition under Section 13B(1) of the Hindu Marriage Act, 1955 or under Section 28 of the Special Marriage Act,**
- **1954,** as the case may be, and then wait for another six months if they have already taken a conscious decision to part ways. The court said that such a situation may lead to mental cruelty and cause more harm than good to the parties involved.
- The court also clarified that this power will be exercised only in exceptional cases where there is no chance of reconciliation and both parties have mutually agreed to end their marriage.
- The court said that it will examine each case on its facts and circumstances and not lay down any general guidelines or criteria for granting divorce by mutual consent under Article 142.

Consensual Divorce

- Consensual divorce is a **type of divorce that is based on the mutual agreement of both spouses to end their marriage legally and peacefully.**

- It is the **shortest, least expensive and least harmful way of a divorce**, as it avoids prolonged litigation, bitter disputes and emotional trauma.
- It also benefits the children of the divorcing couple, as it reduces their exposure to parental conflict and helps them cope with the transition.

Consensual divorce law in India

- In India, consensual divorce can be obtained under two laws: the **Hindu Marriage Act 1955 and the Special Marriage Act 1954. Both these laws provide for a mutual consent divorce**, where the spouses have to file a joint petition in the court and satisfy the following conditions:
- They have been living separately for at least one year. They have not been able to live together and have mutually agreed to dissolve their marriage.
- They have settled all their issues regarding alimony, custody, maintenance, etc. They have given their consent voluntarily and without any coercion or undue influence.
- The court will verify the consent of the parties and try to reconcile them. If the court is satisfied that the conditions are met and there is no possibility of reconciliation, it will grant a decree of divorce by mutual consent.

Article 142 of the Constitution

- **Article 142 of the Constitution empowers the Supreme Court's verdicts and rulings to be enforced.**
- It prescribes that in the performance of its jurisdiction, the **top court may issue any verdict or order necessary to provide "complete justice" in just about any case before it.**
- This power is meant to **supplement the existing legal work and not supplant it.** It is conceived to meet situations which cannot be effectively and appropriately tackled by the existing provisions of law.

Topic 43. LITHIUM INDUSTRY OF CHILE

Important for the subject: Geography

News in Brief

Chile Government plans to take a majority stake in the country's lithium industry. A state-run

lithium company will be set up to take control from private players. Any new lithium contracts will only be issued as public-private partnerships with state control.

The two current contracts will not be terminated. They are with two big lithium producers, the local company SQM (till 2030) and the United States-based Albemarle (till 2043). Government may also try to boost state participation in the operations of these companies. Some experts call this as “nationalization” of Lithium industry. Some call it quasi-nationalization with playing field being levelled in favor of the state.

About Chile

- It is a South American Country
- It has the world’s second-biggest producer of **lithium** and has the largest reserves Chile’s constitution defines lithium as a strategic and exclusively state-owned mineral, because of its possible use in nuclear fusion.

About Lithium

- Referred to as “**white gold**” Used in rechargeable **batteries that power laptops, mobile phones.**
- Used in rechargeable batteries to **power electric vehicles (EVs)**, which is a crucial part of the world’s plan to tackle climate change.

Why Chilean Government wants Majority stake in Lithium Industry?

To boost Chile’s economy

- As countries transit to green energy, demand for lithium rise. Chile struggles to keep up with the demand and fell to the 2nd position in the list of largest lithium producers, taken over by Australia.
- State-run lithium company will “promote, expand and control” the lithium industry and prevent Chile from falling to the 3rd position in 2028 (as predicted by JPMorgan)
- Chilean President wants to set up the lithium company on the lines of Codelco, a Chilean government-owned mining company which is now the world’s largest copper producer.

To protect Chile’s Environment

- The **brine evaporation method used in current production consumes vast amounts of**

water. Water is already scarce especially in the Atacama Desert – most of the lithium reserves are located.

- Widely criticized by **local indigenous groups and environmentalists** Lithium (Li) mining has damaged Chile's biodiversity – a 2022 study – Li Mining led to decline in the number of flamingos in the area. Water becoming scarce in Atacama, fewer flamingos are reproducing, impacting herd numbers.
- Future mining projects to involve consultation with local communities to protect the salt flats.

Brine Evaporation Method

- Lithium brine recovery is a straightforward but time-consuming process. Salt-rich water is pumped to the surface and into a series of evaporation ponds. Over a period of months, the water slowly evaporates and a variety of salts precipitate out, leaving a brine with an ever-increasing concentration of lithium.

Salt Flats

- A salt flat is a natural landscape in which a large area of flat land is covered by salt. World's most well-known salt flat is the Salar de Uyuni in Bolivia – largest in the world and also contains more than half of the planet's lithium reserves.
- A salt flat forms from a natural water body whose recharge rate is lower than the evaporation rate. Over time, all the water evaporates, leaving behind the dissolved minerals, usually salts. They reflect sunlight strongly and thus appear bright.
- The underlying soil is highly saline — even if the water table is shallow. The groundwater is too salty for humans to drink.

Salt Flats of Chile

- Atacama **Salt Flat** is the biggest salt deposit in **Chile**. It has a rough white surface below which there is a large Salt Lake. It is surrounded by mountains, and has no drainage outlets. In the east it is enclosed by the main chain of the Andes, while to the west lies a secondary mountain range of the Andes called Cordillera de Domeyko. The lake under the salt flat has one of the largest lithium reserves in the world.

Challenges Involved

- Getting it approved by Congress, where the President's party doesn't have a majority, and would need the support of Opposition parties Creation of a state-run lithium company could take years for the government.
- Codelco could take years to implement the proposal as it doesn't have any experience in lithium mining. National elections in 2025 could also impact the negotiations between the private players and the government.

Topic 44. KUKI TRIBES

Important for the subject: Geography

News in Brief

A land survey led to violence in Manipur's Kuki-dominated Churachandpur. Tribal bodies, particularly the Kukis, are unhappy with a land survey being conducted by the state as they fear eviction. They claimed to continue non-cooperation against the government until it nullifies the 1966 government order declaring tribal areas as protected/reserved forests.

Kuki Tribes

- The Kukis are an ethnic group of multiple tribes inhabiting the North-Eastern states of India-**Manipur, Mizoram and Assam**; parts of Burma (now Myanmar), and Sylhet district and Chittagong hill tracts of Bangladesh. '**MimKut**' is the main festival of the Kuki tribe. In Manipur, the various Kuki tribes, living mainly in the hills, currently make up **30% of the total population**. While **Churachandpur is their main stronghold**, they also have a sizable population in Chandel, Kangpokpi, Tengnoupal and Senapati districts.
- The **Chin-Kuki group** consists of Gangte, Hmar, Paite, Thadou, Vaiphei, Zou, Aimol, Chiru, Koireng, and many others. The **term Chin** is used for the people in the **neighboring Chin state of Myanmar** whereas **Chins are called Kukis in the Indian side**. While Kuki is not a term coined by the ethnic group itself, the tribes associated with it came to be generically called **Kuki under colonial rule**.

Churachandpur-Khoupum Protected Forest

- Spread across three districts of Churachandpur, Bishnupur, and Noney. Notified under Section 29 of the Indian Forest Act, 1927 by the Government of Manipur with a well-

defined schedule of boundaries.

Tribe Related Constitutional Provisions and Laws

- Article 46 of DPSP – educational and economic interests of vulnerable sections
- Provisions of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 protect the land resource interests of tribals. Under Fifth Schedule, transfer of tribal land to private parties for mining can be declared null and void.
- Under Panchayats (Extension to the Scheduled Areas) Act, 1996 or PESA Act Gram-Sabha has the right to mandatory consultation in land acquisition, resettlement and rehabilitation of displaced persons, ownership of minor forest products, prevention of land alienation, etc.

Section 144 of Cr PC

- It is meant for emergency situations. It empowers a **district magistrate, a sub-divisional magistrate**, or any **other executive magistrate** empowered by the state government, to issue orders to prevent and address urgent cases of apprehended **danger or nuisance**.
- It **prohibits the gathering of four or more people** in the concerned area, while during curfew people are instructed to stay indoors for a particular period. The government puts a **complete restriction on traffic** as well.

Topic 45. BODO AND KARBI TO DIMASA – TRIBAL INSURGENCY

Important for the subject: Geography

Why in news?

The government signed a peace settlement with the Dimasa National Liberation Army (DNLA). It is expected to mark the end of tribal insurgency in Assam.

Claims for Autonomy or Statehood in Assam

- Nagaland (1963), Meghalaya (1969), Mizoram (1986) and Arunachal Pradesh (1987) were carved out from Assam due to demands for greater political autonomy, primarily through statehood demands.
- Bodos (35% of Assam's population) were claiming autonomy since 1960s. Three accords were signed with Bodo militant groups in 1993, 2003, and 2020. The 1993 accord paved

the way for the Bodo land Autonomous Council. The 2003 Accord led to the formation of Bodo Territorial Council (BTC), with jurisdiction over Bodo Territorial Autonomous District (BTAD).

- The insurgency by Karbi groups- demand for an autonomous state, taken off in the 1980s. Greater autonomy and special packages for the Karbi Anglong Autonomous Council were provided. Dimasa groups also claimed autonomy in Assam.

Autonomous Hill Development Council:

- Established under **Sixth Schedule** of Indian Constitution for the administration of tribal areas in **Assam, Meghalaya, Tripura and Mizoram. Article 244 (2) and Article 275 (1)** of the Constitution.

To safeguard the rights of the tribal population in these states.

- **Governor** is empowered to increase or decrease the areas or change the names of the autonomous districts.
- Fifth schedule areas – executive powers of the Union will apply; But **Sixth schedule areas**– within **executive authority of the state**.
- Fifth schedule – administration and control of scheduled areas and scheduled tribes in any state except the four states of Assam, Meghalaya, Tripura and Mizoram.

These 4 states are administered under sixth schedule.

- The **acts of Parliament or the state legislature** do not apply to autonomous districts and autonomous regions or apply with specified modifications and exceptions.
- The Councils have also been endowed with **wide civil and criminal judicial powers**, for example establishing village courts etc. However, the jurisdiction of these councils is **Important for the subject to the jurisdiction of the concerned High Court**.
- In Assam – Hill districts of Dima Hasao, Karbi Anglong and West Karbi and the Bodo Territorial Region are under Sixth Schedule.

Bodos

- Bodo Tribal Community of Assam is considered as the **earliest immigrants of Assam** and mainly concentrated in **Brahmaputra valleys**. It is the **largest minority group of the state**. It is believed to have arrived in Assam **from Tibet** through Bhutan passes. As

the primitive settlers of Assam valley, the Bodo community is considered to be the most traditionally and culturally rich community of the state. For writing they used **Roman script and Assamese script**. Now they have taken up the **Nagari script** for their writing.

- Their rich culture incorporates elements like dancing, singing etc. which reflects the fact that they have many religious practices and beliefs, among which **Bathouism** has special importance. This community is very fond of conventional drinks called **Zu mai**.
- “**Baishagu**” is the main festival of Bodo community. It is celebrated during the month of April every year.

Karbis

- Karbis are an ethnic tribal group scattered in North East India with a **concentration in Assam**. Once they were believed to have lived on the **banks of the rivers the Kalang and the Kopili and the entire Kajiranga area**. Racially the Karbis belong to the **Mongoloid** group and linguistically they belong to the **Tibeto-Burman** group. **Domahi** is celebrated in the months of March-April. It is a festival of thanks giving to the almighty **Hemphu**, the traditional god head of the Karbi Household.

Dimasas

- The major population of Dimasas is residing in the hill district of **Dima Hasao** (erstwhile North Cachar Hills) and in scattered numbers in the districts of **Karbi Anglong, Nagaon** and also in the **Barak valley area**. They are also settled in Nagaland. The language spoken by the Dimasa belongs to the **Tibeto-Burman** linguistic group. **Busu festival** is observed in relation to the harvesting period of their **jhum cultivation**. It is the time for merry making and relaxation after months of hard work.

Topic 46. MOCHA: SUMMER CYCLONES NOT NEW; FANI, AMPHAN WERE MAY STORMS TOO

Important for the subject: Geography

A summer cyclone is likely to take place in the Bay of Bengal around May 8, called Mocha. India has seen a few major cyclones in the Bay of Bengal during April and May in the last few years. However, according to data from the India Meteorological Department (IMD), October and November constitute the peak cyclone season for India.

- A tropical cyclone is **an intense circular storm that originates over warm tropical oceans** and is characterized by low atmospheric pressure, high winds, and heavy rain.
- A **characteristic feature** of tropical cyclones is the **eye**, a central region of clear skies, warm temperatures, and low atmospheric pressure.
- Storms of this type **are called hurricanes in the North Atlantic and eastern Pacific and typhoons in South-East Asia and China**. They are called **tropical cyclones in the southwest Pacific and Indian Ocean** region and **Willy-willies** in north-western
- Storms **rotate counter-clockwise in the northern hemisphere and clockwise in the southern**

The **conditions favorable** for the **formation and intensification** of tropical storms are:

Large sea surface with temperature higher than 27° C.

- Presence of the **Coriolis force**.
- Small variations in the **vertical wind speed**.
- A pre-existing weak low-**pressure area or low-level-cyclonic circulation**.
- **Upper divergence** above the sea level system.

Some of the other recent summer cyclones that hit India Cyclone Fani, May 2019

- Fani is considered the worst cyclone to hit Odisha in this century. It was also the longest lived cyclone in the Bay of Bengal ever observed.
- The extended storm period went on for 11 days in the sea and land put together. What made it even more surprising was that it had formed in the pre-monsoon season, in April

Super Cyclone Amphan, May 2020

- Amphan was the first super cyclone in the Bay of Bengal in the last 21 years and made landfall near Digha in West Bengal on May 20, 2020. It ravaged almost the entirety of south Bengal, including Kolkata.
- Warm subsurface waters in the Bay of Bengal likely helped fuel it. Marine heat waves also likely helped intensify the cyclone from Category 1 (cyclonic storm) to Category 5 (super cyclone) in less than 36 hours.

Cyclone Nisarga, June 2020

- Nisarga originated in the Arabian Sea and made landfall June 3, 2020 on the Maharashtra coast. It was the strongest tropical cyclone to strike the state in June since 1891

Cyclone Yaas, May 2021

- Cyclone Yaas, forming in the Bay of Bengal, devastated several parts of West Bengal May 26 and impacted nearly 10 million people.

Cyclone Tauktae May 2021

- Tauktae originated in the Arabian Sea and made landfall along Gujarat's Saurashtra coast on May 17, leaving a trail of destruction. Four states on the country's western coast — Maharashtra, Saurashtra and Kutch region in Gujarat and south Rajasthan — were heavily affected

Cyclone Asani, May 2022

- Asani had formed May 7 in the Bay of Bengal and dissipated May 12. It had pulled the monsoon winds into the Andaman Sea but did not pull any further. Very heavy rain was reported in Kerala, Andhra Pradesh and Odisha.

Additional Information:

What is a super cyclone?

- Super cyclone refers to tropical storm, where wind speeds cross 220 kmph

What is Bomb Cyclone?

- Normally, in a storm wind flows from high pressure areas into low pressure areas. But, when the pressure drops in the low pressure areas by '24 millibars' in 24 hours, then it rapidly intensifies the difference between the two air masses strengthening the winds that flow — this process is called bombogenesis'

Topic 47. VIOLENCE IN MANIPUR

Important for the subject: Geography

Violence between Manipur's Kuki tribe and the majority Meitei community continued to rage

in several parts of the Manipur.

Background

Manipur was boiling since February 2023

- Manipur has been restive since February when the state government launched an eviction drive seen as targeting a specific tribal group. The drive led to protests but not on the scale of the one seen recently.

High Court's order as a trigger point

- The recent protests were triggered by the Manipur High Court's direction to the State to pursue a 10-year-old recommendation to grant Scheduled Tribe (ST) status to the non-tribal Meitei community.
- The Court's order has brought the historical tensions between the valley-dwelling Meitei community and the state's hill tribes to a boil.

Violence started

- A 'tribal solidarity march' was organized by the All Tribal Students' Union of Manipur (ATSUM) against the order of the High Court.
- Violent clashes broke out at various places in Manipur during the course of this march.

Which are the major communities residing in Manipur?

- The State is like a football stadium with the Imphal Valley representing the playfield at the center and the surrounding hills the galleries.
- **The valley, which comprises about 10% of Manipur's landmass, is dominated by the non-tribal Meitei. This area yields 40 of the State's 60 MLAs.**
- **The hills comprising 90% of the geographical area are inhabited by more than 35% recognized tribes. This area sends only 20 MLAs to the Assembly.**

Why does the Meitei community want ST status?

- There has been an organized push in support of this demand since 2012, led by the Scheduled Tribes Demand Committee of Manipur (STDCM).
- In their plea before the High Court, it was **argued that the Meitei community was**

recognized as a tribe before the merger of the princely state of Manipur with the Union of India in 1949.

It lost its identity as a tribe after the merger.

- The demand for ST status arose from the need to preserve the community, and save the ancestral land, tradition, culture and language of the Meiteis.

As per the arguments forwarded by the community in the court:

- The community has been victimized without any constitutional safeguards to date. The Meitein/Meetei have been gradually marginalized in their ancestral land.
- Their population which was 59% of the total population of Manipur in 1951 has now been reduced to 44% as per 2011 Census data.

Why are tribal groups against ST status for Meiteis?

- Tribals including Nagas, Zomis, and Kukis against the ST status for Meitei. They comprise around 40 per cent of the state's population. The Meiteis are a dominant group controlling the state and its apparatuses.
- Hence, the claim that Meiteis need ST status to protect their culture and identity is self-defeating.
- They feel the ST status to the Meiteis would lead to loss of job opportunities and allow them to acquire land in the hills and push the tribals out. The Manipuri language of the Meiteis is included in the Eighth Schedule of the Constitution.
- Sections of the Meitei community — which is predominantly Hindu — are already classified under Scheduled Castes (SC) or Other Backward Classes (OBC).

Topic 48. KARNATAKA RANKED THE MOST 'INNOVATIVE' STATE IN MANUFACTURING

Important for the subject: Schemes

The National Manufacturing Innovation Survey (NMIS) 2021-22 has ranked Karnataka as the most “innovative” State.

About National Manufacturing Innovation Survey (NMIS):

- It is a joint study by the **Department of Science and Technology (DST) and the United Nations Industrial Development Organization (UNIDO)** **Aim of the survey:** To evaluate the innovation performance of manufacturing firms in India.

It had **two specific components:**

- **Firm-level survey:** It captured data related to types of innovations and innovative measures taken by firms, including the process of innovation, access to finance, resources, and information for innovation etc.
- **Sectorial System of Innovation (SSI) survey:** It mapped the manufacturing innovation system and its enabling role in achieving innovations in firms.
- The SSI study measured the convergence or divergence of current policy instruments in select five key manufacturing sectors important to the Indian economy – textiles; food & beverage; automotive; pharma; and ICT. **The first National Innovation Survey was held in 2011.**

Key Highlights of the Survey Karnataka was followed by **Dadra and Nagar Haveli, Daman and Diu, Telangana, and Tamil Nadu.**

- The survey evaluated the innovation performance of manufacturing firms and the degree of innovation among manufacturing firms in India.
- As per the survey, Telangana (46.18%), Karnataka (39.1%), and Tamil Nadu (31.9%) had the highest share of innovative firms, whereas Odisha (12.78%), Bihar (13.47%) and Jharkhand (13.71%) reported the lowest share of such firm.
- The survey also notes that the most frequent “barriers to innovation” were the lack of internal funds, high innovation costs, and lack of financing from external sources.
- Gujarat and Dadra and Nagar Haveli, Daman and Diu reported the highest frequencies of barriers to innovation.

United Nations Industrial Development Organization

- It is a **specialized agency of the United Nations** with a unique mandate to **promote dynamic and accelerate industrial development.**

It provides support to **its 171 Member States through four mandated functions:**

- Technical cooperation Action-oriented research and policy-advisory services.

- Normative standards-related activities. Fostering partnerships for knowledge and technology transfer. **India is a member of this organization.**

Topic 49. NATIONAL PROGRAMME FOR PREVENTION AND CONTROL OF NON-COMMUNICABLE DISEASES

Important for the subject: Schemes

The Union government has decided to expand and rebrand its program for tackling non-communicable diseases (NCDs) in response to the emergence of many new diseases or disease groups and new health initiatives.

Details

- The program, which was previously known as the National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS), now covers 12 NCDs and 10 health initiatives, including mental health, oral health, palliative care, geriatric care, trauma care, and emergency medical services.
- The new name of the program is Comprehensive Primary Health Care through Health and Wellness Centers (CPHC-HWC).
- **National Program for Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS).** It is a **flagship initiative of the Government of India** to address the rising **burden of non-communicable diseases (NCDs)** in the country.
- NCDs are estimated to account for around 60% of all deaths in India and cause considerable loss in potentially productive years of life.
- It was **launched in 2010** to strengthen infrastructure, human resource development, health promotion, early diagnosis, management and referral of common NCDs such as cancer, diabetes, cardiovascular diseases and stroke.
- The **program covers both urban and rural areas** and provides free diagnostic facilities and drugs for patients attending the NCD clinics at district and community health centers.
- **National Program for Prevention & Control of Non-Communicable Diseases (NPNCDD)** NPCDCS was launched in 2010, and will now be called the **National Program for Prevention & Control of Non-Communicable Diseases (NP-NCD)**. The new name reflects the **shift in focus from only controlling the four major non-communicable diseases (NCDs) to preventing them as well.**

- According to the Mo HFW, the NP-NCD will aim to reduce the burden of NCDs by promoting healthy lifestyles, early detection and timely treatment. The program will also integrate with other health initiatives such as Ayushman Bharat and National Health Mission.
- The program will also strengthen the health system by enhancing human resources, infrastructure, equipment and drugs. The NP-NCD will also leverage digital technologies such as telemedicine and m health to improve access and quality of NCD care.

Topic 50. INITIATIVES TAKEN BY GOVERNMENT TO TACKLE MENTAL HEALTH RELATED ISSUES

Important for the subject: Schemes

As per the National Mental Health Survey conducted by the National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore in 12 States of the country, the prevalence of mental disorders including common mental disorders, severe mental disorders, and alcohol and substance use disorders (excluding tobacco use disorder) in adults over the age of 18 years is about 10.6%.

The major findings of the survey are as under:

- The prevalence of mental morbidity is high in urban metropolitan areas. Mental disorders are closely linked to both causation and consequences of several non-communicable disorders (NCD).
- **Nearly 1 in 40 and 1 in 20 persons suffer from past and current depression, respectively.** Neurosis and stress related disorders affect 3.5% of the population and was reported to be higher among females (nearly twice as much in males).
- **Data indicate that 0.9 % of the survey population were at high risk of suicide. Nearly 50% of persons with major depressive disorders reported difficulties in carrying out their daily activities.**

Initiative taken to tackle mental health:

- National Mental Health Program (NMHP) in 1982:

NMHP has 3 components:

- Treatment of Mentally ill Rehabilitation Prevention and promotion of positive mental health.

Aims:

- Prevention and treatment of mental and neurological disorders and their associated disabilities. Use of mental health technology to improve general health services. Application of mental health principles in total national development to improve quality of life.
- To address the burden of mental disorders, the Government of India is supporting implementation of the **District Mental Health Program (DMHP) under the National Mental Health Program in 704 districts** of the country for detection, management and treatment of mental disorders/ illness
- Under the aegis of the **School Health Program under Ayushman Bharat**, NCERT has developed a specific module on “**Emotional Wellbeing and Mental Health**”, which has activities related to the mental health and well-being of students and teachers.
- The **Ministry of Education** has taken up a proactive initiative, named, ‘**Manodarpan**’, covering a wide range of activities to provide psychosocial support to students, teachers and families for Mental Health and Emotional Wellbeing during the COVID outbreak and beyond, The **Mental Health Care Act 2017** was passed on 7 April 2017 and came into force from 29 May 2018.
- It aims at **decriminalizing the Attempt to Commit Suicide** by seeking to ensure that the individuals who have attempted suicide are offered opportunities for rehabilitation from the government as opposed to being tried or punished for the attempt.
- The Act seeks to fulfill India’s international obligation pursuant to the **Convention on Rights of Persons with Disabilities** and its Optional Protocol.
- The 2017 Act recognizes the agency of people with mental illness, allowing them to make decisions regarding their health, given that they have the appropriate knowledge to do so.
- The Act aims to safeguard the rights of the people with mental illness, along with access to healthcare and treatment without discrimination from the government.
- Additionally, insurers are now bound to make provisions for medical insurance for the treatment of mental illness on the same basis as is available for the treatment of

physical ailments. The Mental Health Care Act 2017 includes provisions for the registration of mental health related institutions and for the regulation of the sector.

- The Government constituted the **Central Mental Health Authority under the Mental Healthcare Act, 2017 on 04/12/2018** Government of India has launched the **National Tele Mental Health Program (Tele MANAS)** on 10th October 2022 to provide access to mental health care services to all through a centralized toll-free helpline
- **IIT-M launched the 'Kushal Program'** which aims to foster closer associations between individual students and faculty members, creating a support network for students who may be struggling academically or emotionally.
- The institute has also launched a **'Be Happy' website** (<https://behappy.iitm.ac.in/>) to provide resources and guidance to support mental health and overall well-being.

Topic 51. INDIA TO RELEASE MANUAL FOR ORGAN DONATION

Important for the subject: Schemes

From standardizing the course for transplant coordinators to developing a manual for setting up an organ transplant program at a hospital, the **National Organ and Tissue Transplant Organization (NOTTO)** is working towards structural reforms to improve organ donation and transplant in the country.

The **organization has been working towards standardizing processes** for registering to receive organs and the allocation of organs across the country, with a call for a **“one nation, one policy”**. The government recently granted special casual leave of up to 42 days to central government employees who donate organs.

About NOTTO

- **National Organ and Tissue Transplant Organization (NOTTO)** is set up under **Directorate General of Health Services, Ministry of Health and Family Welfare**, located in New Delhi.
- **Organ donation in India is regulated by the Transplantation of Human Organs and Tissues Act, 1994.**

About National Organ Transplant Program (NOTP):

- **National Organ Transplant Program (NOTP)** aims to promote organ donation and

transplantation across all States/Union Territories (UTs).

- **Implementing Agency:** Directorate General of Health Services (DGHS), Ministry of Health and Family Welfare is implementing the National Organ Transplant Program.

Objectives of the Program:

- To organize a system of organ and tissue procurement & distribution for transplantation. To promote deceased organ and Tissue donation. Furthermore, to train required manpower. Also, to protect vulnerable poor from organ trafficking.
- Lastly, to monitor organ and tissue transplant services and bring about policy and program corrections/ changes whenever needed.

Key Features of the Program:

The key activities under the program include:

- Setting up of State Organ and Tissue Transplant Organizations (SOTTOs) in each State/UT. Setting up of National/ Regional/State Bio-material centers.
- Financial support for establishing new Organ Transplant/retrieval facilities and strengthening of existing Organ Transplant/retrieval facilities. Training to transplant experts including surgeons, physicians, transplant coordinators, etc.
- Financial support for the hiring of Transplant Coordinators to medical colleges and trauma centers. Post-transplant immune-suppressant drugs to Below Poverty Line (BPL) patients.

Nodal Centre:

- **National Organ and Tissue Transplant Organization (NOTTO) has been set up as the apex center for all Indian activities of coordination and networking for procurement and distribution of organs and tissues and registry of Organs and Tissues Donation and Transplantation in the country.**

Topic 52. TELE MANAS COUNSELS KASHMIR'S DISTRESSED SOULS

Important for the subject: Schemes

Over the past six months, the Institute of Mental Health and Neurosciences (IMHANS) in Srinagar has received 10,500 calls from people in distress across Jammu and Kashmir's toll-

free numbers 14416 and 1800-891-4416. The Tele-MANAS cell at IMHANS was launched on November 4 with the support of the National Health Mission, Jammu and Kashmir.

It aims to provide mental health support, early screening, first-aid, distress management, mental well-being, suicide prevention, and psychological crisis management in Jammu and Kashmir.

Tele-MANAS

- **It was launched on World Mental Health Day (10 October). The Tele Mental Health Assistance and Networking Across States (Tele MANAS) initiative is a comprehensive mental health care service.**
- **Tele-MANAS aims to provide free tele-mental health services all over the country round the clock, particularly catering to people in remote or under-served areas.**
- **The Tele-MANAS program consists of a network of 23 tele-mental health centers of excellence, with NIMHANS as the nodal center. Indian Institute of Technology (IIT) Bengaluru and the National Health Systems Resource Centre (NHRSC) have been roped in for technical support.**

Topic 53. DON'T INCREASE UNSECURED LOANS EXPOSURE: RBI TO BANKS

Important for the subject: Economy

Why in News?

As part of increasing caution amidst growing macro-economic uncertainties and bank collapses in the US and Europe, India's central bank is asking banks to be watchful over their retail portfolios, particularly the unsecured loans. These include personal loans, credit cards, small business loans and micro finance loans.

The overall share of unsecured loans as an average across private banks has increased by over 300 basis points since June.

Latest Credit Deployment Data

- It is published by RBI.
- Unsecured loans lent between February 2022 to February 2023 stood at ₹2.2-lakh crore, higher than the deployment towards large corporates at ₹1.18-lakh crore.

- The size of the home loan market during this period was ₹2.49-lakh crore just marginally larger than the unsecured loans market.

What are Unsecured Loans?

- In unsecured loans, the borrowers' assets are not pledged as collateral. Examples of such loans are personal loans, education loans, credit cards etc.
- They are given out on the basis of credit worthiness of the borrowers. The interest rates on unsecured loans is higher than the secured loans. This is mainly because the options for recourse for lender in case of unsecured loans are limited.

Previous Measures

- In 2019, the risk weight on unsecured loans excluding credit cards was reduced from 125 per cent to 100 per cent to place them at par with other retail loans. It was also done to harmonise the risk weights to Basel-III requirements.
- Despite repeated warning to banks, especially private banks, unsecured loans growing faster than the secured retail loans may lead to increase in risk weights by RBI.

Basel III Requirements

- Basel III is an **internationally agreed set of measures** developed by the BCBS in response to the financial crisis of 2007-09. The measures aim to strengthen the regulation, supervision and risk management of banks.

Basel 3 measures are based on three pillars:

- **Pillar 1:** Improve the banking sector's ability to absorb ups and downs arising from financial and economic instability
- **Pillar 2:** Improve risk management ability and governance of banking sector
- **Pillar 3:** Strengthen banks' transparency and disclosures

Basel Committee on Bank Supervision (BCBS)

- It is a **committee under the Bank for International Settlements**. Established in **1930**, the **BIS** is owned by 60 central banks, representing countries from around the world that together account for about 95% of world GDP.
- Its head office is in **Basel, Switzerland**. Its mission is to **serve central banks in their**

pursuit of monetary and financial stability, to foster international cooperation in those areas and to act as a bank for central banks.

No Proper Checks

- Adequate credit checks may not be in place due to securitization of personal loans and 30-minutes sanctioning. Difficult to assess the exact asset quality of such loans.
- So, to avert a systemic risk, the pace of growth in the unsecured loans should be reduced. Even on the Microfinance side banks should not overdo growth despite the improvement in demand and collection efficiencies of MFI loans.

Sachetisation of Loans

- This means loans can be broken down into levels that actually suit the needs of the borrowers, while keep lenders interested. If *the loan's tenure and terms are designed flexibly to align with borrowers' cash flow cycle*, the whole exercise is bound to be sustainable

MFIs

- Microfinance institutions (**MFIs**) are financial companies that provide small loans to people who do not have any access to banking facilities.

Small Finance Banks

- Small Finance Banks are the financial institutions which provide financial services to the unserved and unbanked region of the country. They are registered as a public limited company under the Companies Act, 2013.

NBFCs

- NBFCs are financial institutions that provide various financial services and products, including loans, insurance, and asset management, but **do not have a banking license**. Unlike banks, NBFCs do not have the authority to accept **deposits from the public**.

Topic 54. QUALITY CONTROL ORDER NOT PROTECTIVE

Important for the subject: Economy

Quality Council of India (QCI)

The Quality Council of India (QCI) works for promotion of Quality Standards across various economic and social sectors such as manufacturing, education, health and environment.

- The QCI has been established as a National body for Accreditation on recommendation of Expert Mission of EU after consultation in Inter-Ministerial Task Force, Committee of Secretaries and Group of Ministers through a Cabinet decision in 1996.
- Accordingly, the QCI was set up through a PPP model as an independent autonomous organization with the support of Government of India and the Indian Industry represented by the three premier industry associations, (i) Associated
- Chambers of Commerce and Industry of India (**ASSOCHAM**), (ii) **Confederation of Indian Industry (CII)** and (iii) **Federation of Indian Chambers of Commerce and Industry (FICCI)**.

The QCI is the umbrella organization of five boards:

NABL – National Accreditation Board for Testing and Calibration Laboratories;

NABH- National Accreditation Board for Hospitals & Healthcare;

NABET- National Accreditation Board for Education and Training;

NABCB- National Accreditation Board for Certification Bodies; and NBQP- National Board for Quality Promotion.

- Besides carrying out accreditation, certification, empanelment and third-party assessment activities through its Boards, QCI is also involved in project initiation, planning & development and its successful execution for various ministries, Government departments and State Governments. It carries out such activities through its five Boards and three divisions under Special Projects namely:
- [ZED] – ZERO DEFECT ZERO EFFECT, [PADD] – Project Analysis and Documentation Division; and [PPID] – Project Planning & Implementation Division.
- The projects are carried out as and when allotted by the concerned

departments/organizations and as per the scope, guidelines and timelines as agree with the concerned organizations/ departments.

- QCI operates its quality assurance activities in areas related to industry, education & training, laboratory, environment, health care, sports, etc. through its above five constituent Boards.

Topic 55. DE-DOLLARISATION: THE RACE TO ATTAIN THE STATUS OF GLOBAL RESERVE CURRENCY

Important for the subject: Economy

De-dollarisation

De-dollarisation refers to the replacement of the U.S. dollar by other currencies as the global reserve currency. A reserve currency refers to any currency that is widely used in cross-border transactions and is commonly held as reserves by central banks.

China and Russia are among the nations that have supported de-dollarization. Iran and Russia will jointly issue a new crypto currency backed by gold, to serve as a payment method in foreign trade.

Need for de-dollarization:

- The U.S. imposed several sanctions that restricted the use of the U.S. dollar to purchase oil and other goods from Russia.
- This has been seen by many countries as an attempt to weaponise the dollar. Since international transactions carried out in the U.S. dollar are cleared by American banks, this gives the U.S. government significant power to oversee and control these transactions. Currently, the Chinese yuan is seen as the primary alternative to the U.S. dollar owing to China's rising economic power.

Advantage of a reserve currency advantage

- A reserve currency is the foreign currency held by central banks (in India's case, RBI) to: facilitate international transactions, stabilize exchange rates and bolster financial confidence
- Other currencies such as the British pound and the French franc have served as

international reserve currencies in the past. It is the **currencies of economic superpowers that have usually ended up being used as the global reserve currency.**

- Critics of the U.S. dollar believe that the global reserve currency status gives the dollar unfair privileges over other countries, thus justifying de-dollarization attempts by many countries.
- It should be noted that when a country's fiat currency enjoys reserve currency status, it gives the country the power to purchase goods and other assets from the rest of the world by simply creating fresh currency out of thin air.
- However, such irresponsible expansion of the money supply can cause the debasement of the currency and eventually threaten its status as a reserve currency.

Why dollar is so popular?

- The U.S. dollar is **widely used in international transactions because people actually prefer to use the American currency over others for various economic reasons.**
- A recent attempt by India and Russia to carry out trade between the two countries in Indian rupees rather than in U.S. dollars has hit a roadblock because the value of India's imports from Russia far outweighs its exports.
- This left Russia with excess rupees in hand which it was unwilling to spend on Indian goods or assets, and led to Russian demands for the settlement of bilateral trade in U.S. dollars.
- The high level of trust that global investors have in the U.S. financial markets, perhaps owing to the 'rule of law' in the U.S., is considered to be a major reason why investors prefer to invest in U.S. assets.