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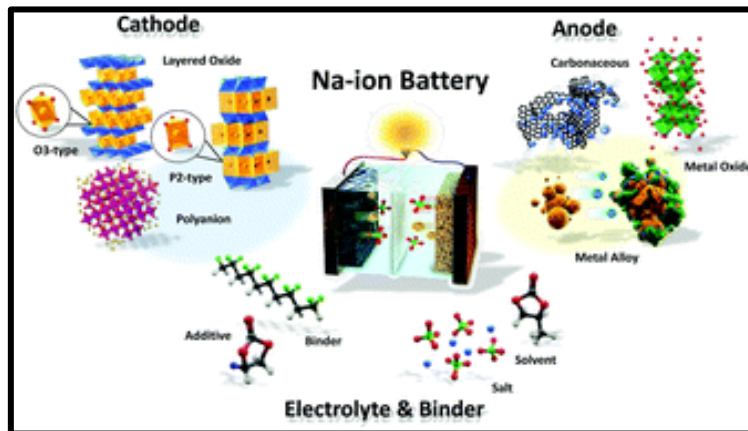
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## Topic 1. SODIUM ION BATTERY

*Important for Subject: Science*



The Indian off-grid storage market for energy is predicted to grow exponentially in the near future as the country strives to fulfil 50 percent of its energy needs using energy sources that are renewable by the year 2030, which will result in an increased demands for batteries to store energy.

- **Conceptual Background:** At present the two most popular commercial choices to meet the energy storage requirements for India is lithium-ion batteries (LIB) or lead-acid batteries (LAB).
- LABs save 13.3% more emissions than nickel-manganese-cobalt (NMC) batteries but have low energy density, explosive potential and can even damage neurons of central nervous system.
- LIBs are highly valuable commercially because of their energy density, small size, and extended longevity of the cycle.
- They are utilized in EV manufacturing as well as storage of energy in electronics and energy storage in off grid power sources.
- However, the scarcity of materials and high costs hinder their capacity scaling.
- So diversification in battery technology is essential to meet the rapid growth of the Indian battery market for storage of energy taking into account the concerns that arise from material scarcity and supply vulnerability production costs, environmental impact and health when using LIBs and LABs.

- Sodium Ion Batteries (SIB) They are also known as sodium-ion cell (NIB also known as SIB) can be described as a form of rechargeable battery that is similar to lithium-ion batteries but making use of sodium ions (Na<sup>+</sup>) as charge carriers.
- Its principle of operation and design are nearly identical to the lithium-ion batteries that are commercially available battery types, except that sodium compounds are employed in place of lithium compound.
- Benefits High naturally abundant (seventh-most abundant material on the planet) cheaper than LIBs and 20%-30% less than NMCs, which is lighter in comparison in comparison to LIBs with a density up to 160Wh/kg.
- Non-flammable and with no thermal runaway, it operates with a larger Temperature range i.e. superior in freezing climates (as low as -20), resist moisture and have 45 percent lower global warming potential as lithium iron phosphate (LFP) batteries and approximately 25 percent smaller than NMC batteries.
- Batteries can be discharged to 0 volts to ensure safety during transport, which reduces the expense of transportation.
- Electric vehicles are powered by sodium Ion batteries.
- Low energy density makes it difficult to construct smaller batteries that can be used in electric vehicles.
- E.g. LIBs come with 300 Wh/kg energy density and are the best choice for high-speed and heavy battery electric vehicles.
- Limited amount charges-discharge cycle.
- E.g. SIBs are able to be recharged 2,000 times during 80 percent of their lifetime while LIBs can be recharged as many as 4000-6,000 times.

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## **Topic 2. IN-SPACE: LIFT FOR SPACE-GRADE ELECTRONICS**

*Important for subject: Science & Technology*

On the 10th June 2022, the Prime Minister Narendra Modi officially opened his Indian National Space Promotion and Authorisation Centre (INSPACe) headquarters in Ahmedabad.

- **About INSPACe:** The organization is created to create a fair the playing field that allows private firms to utilize Indian the space industry.

- It is part of the reforms designed to provide an increase to the private sector's participation in all aspects of space-related activities.
- IN-SPACe will also assist, aid and assist private sector in space activities by promoting policies that encourage participation and creating an open regulatory environment.
- In the past, New Space India Limited (NSIL) was created as an agency that could produce PSLV using Indian companies under the consortium route.
- The reforms will allow for the Indian Space Research Organisation (ISRO) to focus in research and development as well as innovative technology, missions of exploration, and human spaceflight.

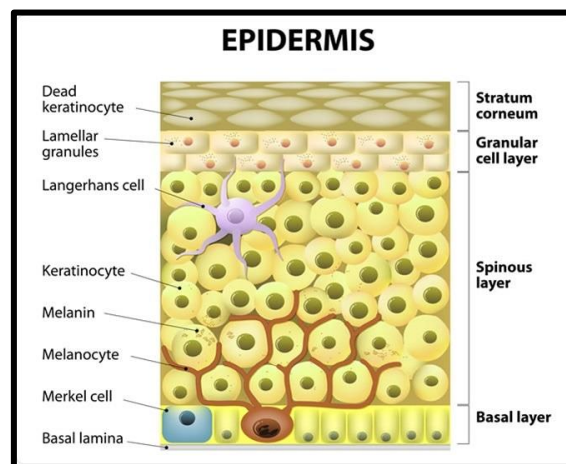
### **What are Space-grade electronics?**

- Space-grade electronics are able to withstand the harsh environment of space, whether it's cosmic radiation, solar radiation or even extreme weather conditions.
- These electronics that are radiation-hardened are engineered to function precisely, with high power density, and high energy efficiency, at extreme speeds of travel and also in the face of extreme shocks, noises, vibrations and shocks.
- The requirements for materials for the design and fabrication of electronics for space differ from the conventional consumer electronics found on Earth.
- Gallium nitride (GNT), silicon carbide, and silicon-germanium are the preferred materials to make space-grade electronics.
- They have better electrical conductivity, power density and higher efficiency than traditional silicon-based semiconductors.
- Strategic electronics A plan to reach the \$300 billion mark in electronic exports and production in 2026, released through MeITY Ministry of Electronics and Information Technology (MeITY) in January 2022, includes mobile phones, consumer electronics and information technology hardware, electric vehicles, wearable devices as well as LED lighting.
- The roadmap also includes' strategic electronics such as radars, security systems, terahertz wireless systems, millimetre and microwave sensors, as well as electromagnetic wave applications.

- It also mentions 'defence electronics devices that are used in weapons systems, communications commands computers and intelligence, surveillance secure networks aerial, submarine as well as terrestrial, as well as other things.
- The plan aims to increase the segment of 'strategic electronics' from 4 billion in 2020-21 to \$12 billion by 2025 to 26; and also the "defense electronics" industry to 60 billion dollars, with the \$40 billion coming from products and 20 billion from components and subassemblies.

### Topic 3. MELANIN

*Important for subject: Science & Technology*



A Indian startup is able to create melanin, a polymer that has many uses, for a less than the current price.

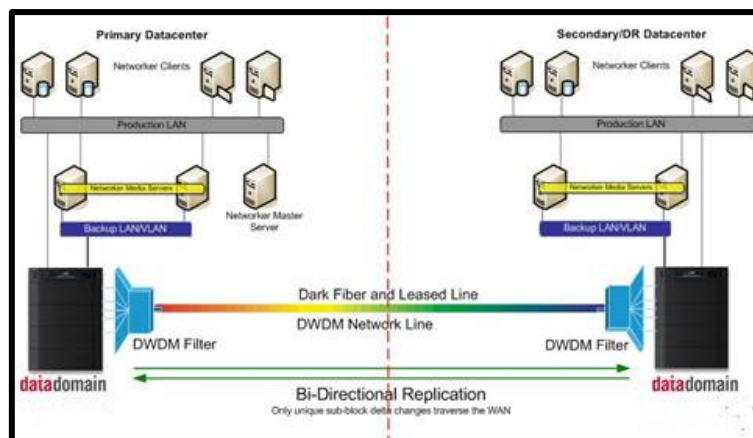
- **About Melanin:** Melanin is an umbrella term used to describe the natural pigments that are found in the majority of living things. Melanin, a molecule that is a polymer (long chain of related molecules) is derived of an amino acid known as Tyrosine.
- The body produces melanin to serve to protect us from the sun's ultraviolet rays.
- The more melanin there is the darker the eyes hair, skin and hair. Melanin is the catalyst for all the cellular processes within the organism.
- Applications: Melanin is an organic semiconductor, which is used in bioelectronics, such as biosensors and pacemakers.
- It is important in drug delivery as protection against sunlight, radiations from gamma rays, and it could serve as a shield for radiation.



- Cathode materials are used for batteries (rechargeable magnesium and sodium Ion batteries) because it is able to break water when it is when exposed to sunlight.
- Some melanin-producing fungi are able to develop even in radioactive zones like Chernobyl where there was an accident at the nuclear level.

#### Topic 4. DARK FIBRE

*Important for Subject: Science and Technology*



The Securities and Exchange Board of India (Sebi) has imposed massive penalties in a "dark fibre" case in which certain brokers were accused of taking advantage of its (NSE's) Internet infrastructure, allowing them to gain faster access with the colocation (colo) facilities.

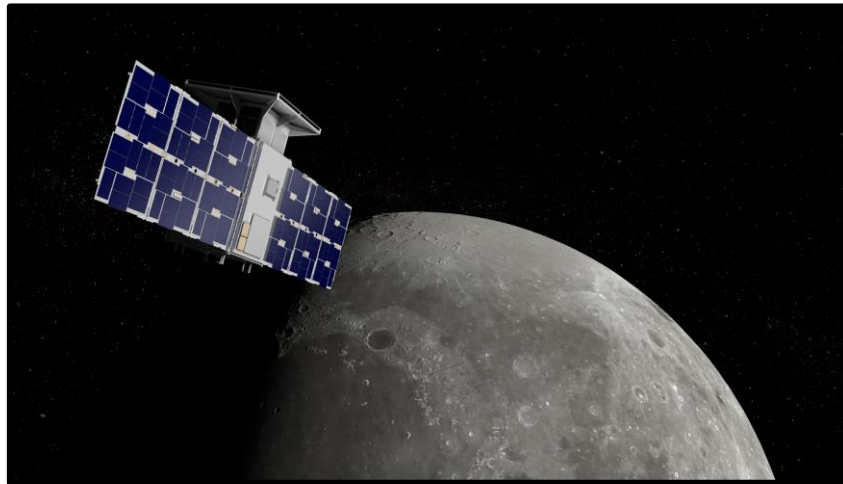
- **Information:** GKN established direct peer-to-peer (P2P) connectivity through dark fibre, also known as near-dark fiber that ensured faster speeds and reduced latency, providing quicker access to market information.
- The other brokers that use the colo option of having to not accept dark fibre services from unauthorised vendors.
- **Dark fibre:** It's an optical fibre that is not being used and was laid, but it isn't being utilized for fibre-optic communications.
- Because fibre-optic cables transmit data via light pulses the term "dark" cable refers to one in which light pulses aren't transmitted.
- Businesses lay optical fibres with additional lengths to prevent cost repetition when they require more bandwidth.
- This is also referred to by the name of unlit fibre.



- These unlit fiber optic cables later created an industry for private services that cannot be accommodated by the lit fibre cables (i.e cables that are used for traditional long-distance communications).
- The unutilized strands of Fiber are sold to customers to build their own private optical fiber network.
- This is distinct from lease of bandwidth.
- That is, it is different from purchasing bandwidth or leasing a line that is already on a network.
- It is the Dark Fiber network is under complete control of the user instead of the provider of the network.
- **The advantages that can be gained from it include:** high performance, secure network flow and segregation from other traffic.
- Superfast speeds, low and fixed costs Secure medium Full control of the fiber-optic network.
- Applications include Fibre to the Antenna (FTTA)-Mobile network providers can utilize dark fibre to offer mobile backhaul, 5G-backedhaul and connection to the network core.
- Data Centre Interconnect (DCI)-Dark fibre can be utilized to create a high-capacity direct point-to-point connectivity between two centres.
- **National Research and Educational Networks (NRENS):** Most National Research and Educational Networks (NRENS) that connect between research institutions and universities make use of dark fiber.
- There are many licences available to a company that can lease dark fiber in India.
- Co-location is a type of data centre inside the exchange's premises, hosting brokers' servers that are connected to the fibre network.
- Co-location space is provided by brokers to exchanges for rapid trading.
- Certain brokers are permitted to use dark fibre, without a specific policy.
- The NSE does not have a clearly defined public policy on what and when it allows competitors to co-lo which gave benefits only to a few.

## Topic 5. CAPSTONE- NASA'S NEW SATELLITE

*Important for Subject: Science and Tech*



NASA launched CAPSTONE, an oven-sized microwave CubeSat with a weight of only 55 pounds (25 kg).

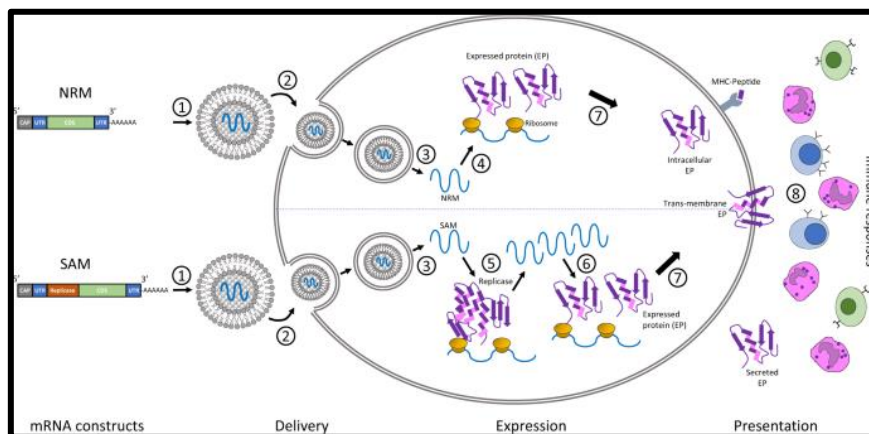
### **What is CAPSTONE?**

- CapSTONE, which stands in the form of Cislunar Automated Positioning Systems Technology and Navigation Experiment is developed to test a novel lunar orbit, which is elliptical.
- The satellite, which launched using the Rocket Lab's Electron rocket, part of rocket launch complex 1 at Rocket Lab Launch Complex 1 and is headed towards an orbit that is planned in the near future to be used for Gateway which is a lunar-orbiting satellite which is part of NASA's Artemis program.
- As a pathway finder to Gateway, CAPSTONE aims to lower the risk of future spacecraft by proving the effectiveness of new technology for navigation and testing the nature of the halo-shaped, circular orbit.
- The orbit is referred to as an NRHO, or a near-rectilinear halo orbit (NRHO).
- It is extremely elongated and lies near the exact balance place between the gravity fields that are the gravities of Earth as well as the Moon.
- This gives stability to long-term missions, such as Gateway, NASA said on its website.

- When Gateway reaches time of the Moon, CAPSTONE will enter the NRHO spacecraft, which will orbit within 1,600 kilometers of the moon's North Pole on its near passage and 70,000 km away from its South Pole at its farthest.
- Spacecraft will repeat this cycle every six and a half days, and will remain in this spacecraft's orbit at the least for six months in order to examine the its dynamics.
- CAPSTONE will be able to experience small-scale launches of CubeSats that go beyond low Earth orbit, to the Moon and further.
- Spacecraft currently located in low-Earth orbit. It is connected to Rocket Lab's Lunar Photon.

## **Topic 6. MRNA AND IT'S WORKING**

*Important for Subject: Science and Technology*



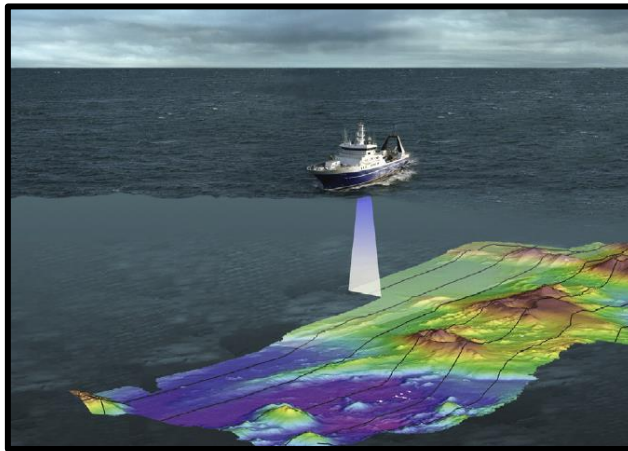
The first mRNA that is grown at home in the United States. Covid-19 vaccine the GEMCOVAC-19 vaccine developed by the Pune's Gennova Biopharmaceuticals has got a "restricted emergency usage" approval for people aged 18 or over.

- mRNA works: In the course of the Covid-19 pandemic spreads the mRNA vaccine was the first candidate to be tested in human trials across the globe.
- The two vaccines made available for use in US were built on the technology of mRNA.
- Contrary to vaccines that inject an inactivated or weaker virus into our bodies to trigger an immune response.

- These two treatments (Pfizer-BioNTech Moderna and Pfizer-BioNTech Moderna) made use of messenger RNA, also known as mRNA, to transmit a message to the immune system.
- In essence, the technology utilizes genetically engineered mRNA that instructs cells to create the S-protein that is found in the coat of Covid-19.
- According to reports from the US-based Mayo Clinic, after vaccination muscles begin to make S-protein fragments and display these on the cells' surfaces.
- This triggers the body to make antibodies.
- However, these vaccines need to be stored in sub-zero temperatures because mRNA is fragile and easily breaks down.
- It is a thermostable vaccine "Unlike those in the West where vaccines must be stored at temperatures below freezing and the difficulty in India was to keep the vaccine in storage between 2-8 degrees Celsius.
- Gennova was required to develop new methods to accommodate Indian local requirements regarding the best way to store and distribute.
- GEMCOVAC-19 is now able to be stored at temperatures that are comparable to those of a typical medical refrigerator.
- However, simply taking out water through Lyophilisation of the mRNA virus does not perform.
- The pressure surrounding needs to be altered and maintained to ensure that the properties of the vaccine remain the same as prior to Lyophilisation.
- To achieve this it was necessary to include an external agent that at a specified concentration, ensures it stays stable under conditions of lyophilization.
- The Lyophilisation technology isn't new however, the concept of a lyophilized MRNA vaccine is a first.

## Topic 7. GENTLER SONAR

*Important for Subject: Science & Technology*



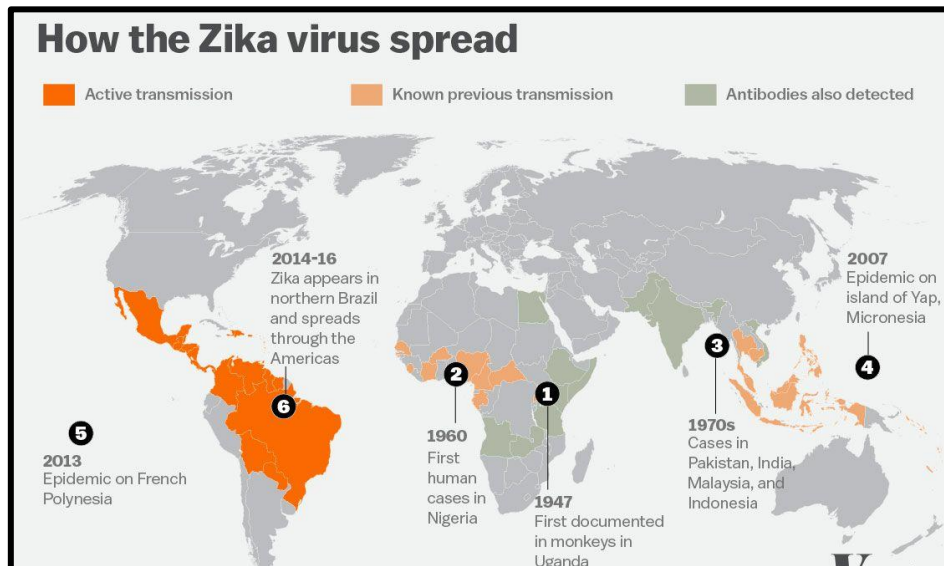
Scientists at the Defense Advanced Research Projects Agency in the United States are working to replace the whale-harming sonars with soundscapes produced by marine creatures. The low-frequency booms produced by giant groupers called goliaths (*Epinephelus Itajara*) and the incredibly loud snaps of the pistol shrimp are just a few of the sounds being investigated.

- Sonars and Whales Active sonar, the transmission system used by certain vessels to aid in navigation, can harm the well-being and survival of marine animals.
- Recent studies have revealed that blue and beaked whales can be sensitive active sonar of mid frequency and can be seen moving swiftly away from the source of sonar.
- This causes them to stop eating and can result in massive strandings.
- Certain marine mammals like dolphins and whales, employ echolocation and "biosonar" systems to locate predators and prey.
- It is believed that sonar signals from active sources can cause confusion for these animals and could interfere with their basic biological functions such as mating and feeding.
- The study has revealed that whales are afflicted with decompression sickness.
- This is which is a condition that causes nitrogen to be pushed into gas bubbles inside the tissues.
- It's caused by a rapid and long appearance.

- While whales were initially thought to be immune to the disease however, sonar is implicated in causing changes in behaviour that could lead to decompression sickness.

## Topic 8. SPREAD OF ZIKA VIRUS

*Important for Subject: Science and Technology*



Scientists from the National Institute of Virology (NIV), Pune, have warned of the spread of Zika virus, in conjunction with Chikungunya and Dengue in a variety of States as well as Union Territories where it has not previously been reported and has established local transmission of India Zika virus (ZIKV) The Zika virus (ZIKV) is an infectious flavivirus that is transmitted by vectors can be transmitted through the bite of affected Aedes mosquitoes, mostly Aedes aegypti as well as Aedes albopictus.

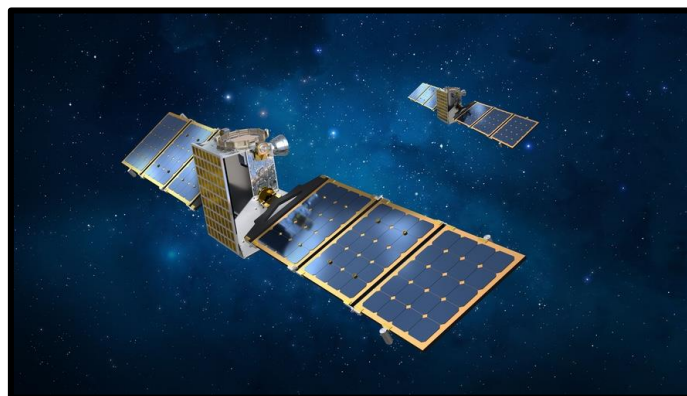
- It's an infectious disease that those who are infected are able to pass on Zika sexually.
- The period of incubation (the period from the moment of the moment of exposure until symptoms) for Zika virus disease is believed to be 3-14 days.
- Was first discovered within Uganda in 1947, in monkeys, Zika was detected in humans just five years afterward.
- A few cases have been observed across the globe since the 1960s, however the first outbreak was reported in 2007 on the Island of Yap in the Pacific.
- An outbreak of major proportions in Brazil has led to the realization that Zika may be related to microcephaly, a disorder where babies are born with tiny and weak brains.



- The first case of Zika was reported in India, Zika virus was first identified in 1952-53.
- The most recent major outbreak was in the year 2018, when more than 80 cases were discovered in Rajasthan.
- The cause is microcephaly, particularly when pregnant women are affected.
- There has been a significant increase in the prevalence of Guillain-Barre syndrome, a neurological condition that can lead to paralysis and even death as per the WHO. The signs of Zika virus.
- The majority of people who are infected with the virus don't exhibit symptoms.
- The symptoms are like those of influenza, which includes fever, headache, body ache and so on. The symptoms can get worse.
- People need to seek medical attention for a rash, which may occur as in dengue, and some patients may also suffer from conjunctivitis.
- Treatment Zika virus generally requires the rest of the body, drinking plenty of fluids and the usual medicine for fever and pain. Zika does not have a cure or vaccination.

### **Topic 9. NASA ANNOUNCES LAUNCH DELAY FOR PSYCHE ASTEROID MISSION**

*Subject: Science and technology*



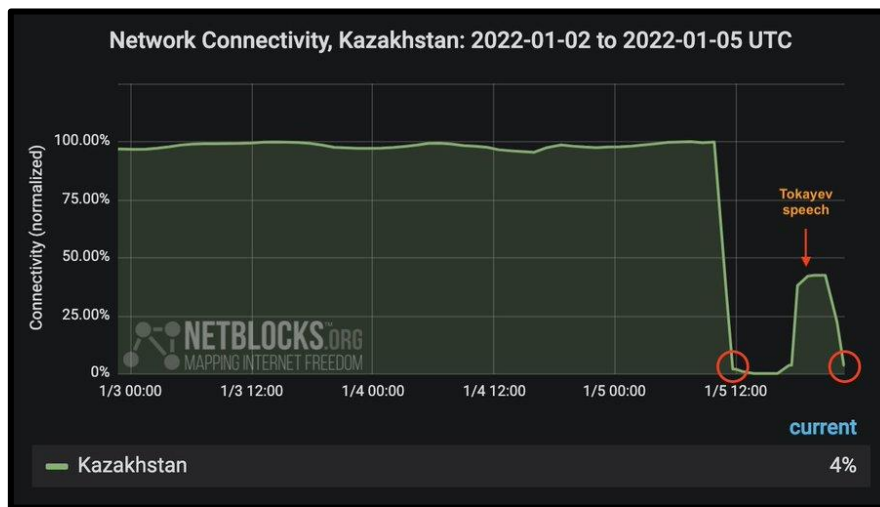
Space Psyche asteroid mission Psyche is an orbiter mission planned which will investigate the source of planet's cores through looking at the metallic asteroid with the same name as part of NASA's Discovery Program. The NASA's Jet Propulsion Laboratory (JPL) will be in charge of the project.



- The Psyche spacecraft was designed using solar electric propulsion.
- The scientific payload comprises an imager with multispectral capabilities magneticometer, as well as the gamma-ray spectrometer.
- 16. Psyche is the largest known M-type asteroid.
- It was thought as the iron core that was exposed of an early planet.
- Scientists believe it is possible that Psyche might be the core that was exposed of a proto-planet which could have been larger than Mars but lost its surface during the course of violent collisions.
- The Psyche mission is designed to determine 16 Psyche's geochemistry and shape, as well as its composition magnetic field, mass distribution. It is anticipated to enhance the understanding of the process of formation of planets and the interior.
- The science objectives for this mission are to understand the previously unexplored element of the formation of planets iron cores.
- Explore the interior of terrestrial planets, including Earth by directly looking at the inside of a distinct body that otherwise was not visible.
- Discover a brand new world made from metal.
- **The scientific objectives include:** Determine if 16 Psyche is a core or is it a unmelted material.
- Analyse the relative age of the regions on 16 Psyche's surfaces.
- Find out if small metal bodies contain the same elements of light as are found in earth's core of high pressure.
- Determine if 16 Psyche was formed in conditions that were more oxidizing or reduced than Earth's core.
- Find out the topography of 16 Psyche.

## Topic 10. 'HERMIT' SPYWARE

*Important for Subject: Science and Technology*



Awareness in the field of technological advancement Hermit is commercial spyware that is known as being used by governments with victims of the spyware being Kazakhstan as well as the northern part of Syria and Italy as per Lookout as well as Google.

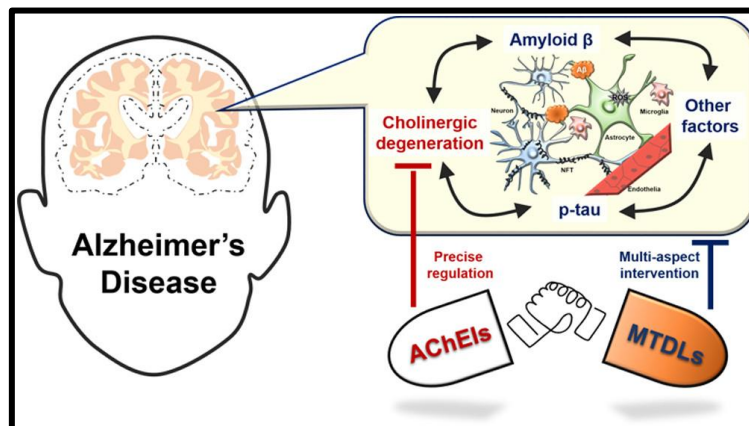
- The spyware utilizes different modules that are downloaded by its control and command servers when they're required, to track call logs, capture ambient audio redirect phone calls and gather photos, messages email addresses and even the precise location from the device of the victim.
- Hermit, which is compatible with every version of Android variants, attempts to root an affected Android device, which gives the spyware access to the data of the victim.
- The victims targeted by the spyware are targeted via text messages and then tricked to download and install the malware application, which is disguised as a legitimate messaging or telco application that is not available in the store for apps.
- There is evidence to suggest that in some instances, the actors from the government who control the spyware cooperated with the internet provider of the target to disable their mobile connectivity, which could be an attempt to entice users into downloading a application based on a telco, with the intention of returning connectivity.
- Hermit is the newest spyware designed for government use and is employed by state-run agencies.
- While it's unclear who's been targeted by the government employing Hermit Similar mobile spyware created by hacking-for-hire companies, including NSO Group and

Candiru, have been linked with the monitoring of activists, journalists, and human rights activists.

- Hermit spyware also targets iPhones that it was not able to accomplish.
- **Its Hermit iOS app:** That makes use of Apple certificate for enterprise developers, allowing this spyware to get installed onto a victim's device outside the app store contains six distinct vulnerabilities, including two that were not previously seen vulnerabilities or zero-days at the time of their detection.

### **Topic 11. ANOTHER FAILURE EXTENDS THE ELUSIVE SEARCH FOR ALZHEIMER'S 'SILVER BULLET'**

*Important for Subject: Science and Technology*



A novel Alzheimer's drug that aims at slowing or stopping cognitive decline in those at susceptible to developing the disease in the early stages is not working in clinical trials.

#### **What is Alzheimer's disease?**

- This is a degenerative brain disease which slowly deprives patients of their thinking and memory capabilities.
- It is the second most prevalent type of dementia that results in impairment of cognitive function recalling, thinking and reasoning.
- These are the factors that contribute to 60% to 70% of cases.
- The pathology of the disease is the deposition in the brain of an unnatural protein known as beta-amyloid within the brain.

- The abnormal clusters (beta-amyloid plaque) and bundles of fibres (neurofibrillary tangles) as well as the losing connections between neurons that transmit information within the brain are important symptoms of the disease.

### What was the most recent study that didn't work?

- The decade-long trial utilized crenezumab, which is a drug specifically designed to inhibit betaamyloid, in the most recent trial, but did not provide "significant clinical benefits" In 2021, the USFDA approved Biogen's beta amyloid-targeting drug, aduhelm.
- This makes it the first Alzheimer's drug to be approved in the US within the last 20 years.
- As the debate continues to simmer the crenezumab's debacle has brought into question the entire strategy of relying too heavily on neutralising beta-amyloid in order to fight Alzheimer's disease.
- It's a strategy currently being used across the vast majority of Alzheimer's research studies.

### Topic 12. HUB 2.0

*Important for Subject: Economy*



### Why in the news?

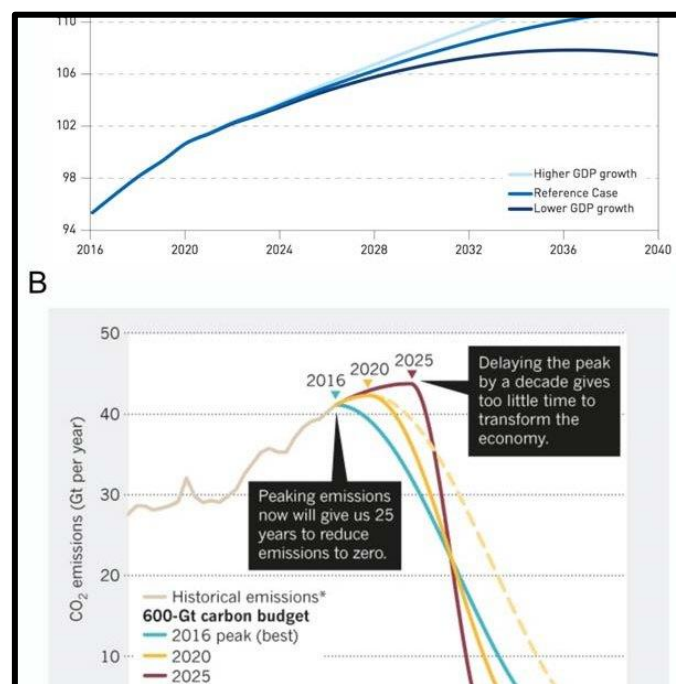
- Telangana CM K Chandrashekar Rao has inaugurated T-Hub 2.0 the largest innovation campus with an goal "to incubate the next generation of start-ups" which could be important pillars of the economy.

- T-Hub: Technology Hub (Technology Hub) was established in the year 2015 at IIT Hyderabad.
- T-Hub (Technology Hub) is an intermediary for innovation and business incubator that is based within Hyderabad, Telangana, India.
- It is built on the triple helix model for innovation.
- It is a collaboration between Hyderabad, the Government of Telangana, three universities located in Hyderabad (the International Institute of Information Technology and the Indian School of Business and the National Academy of Legal Studies and Research) as well as companies in the private sector.
- T-Hub offers Indian and foreign startups access to the latest technology, talent mentors, customers, investors, corporates as well as government agencies.
- T-Hub can also help central and state government agencies develop ecosystems for innovation.
- The T-Hub 2.0 It is being established in Raidurg located in Hitec City.
- It was constructed on an area of 5.82 million square feet.
- This is the biggest ever innovation campus.
- The second largest campus for innovation can be found at "start-up incubator Station F" located in France.
- T-Hub 2.0 will function as a microcosm for the ecosystem of innovation.
- It will host more than 2000 start-ups, corporates and universities, investors, as well as national and international ecosystem facilitators, as well as national and international ecosystem.
- Telangana government has made investments of more than two hundred thousand crores in the facility.
- It will provide a variety of programs to start-ups and established partnerships with various companies and similar organizations around the world.
- The triple helix model of innovation is a system that involves interactions among academia (the university) as well as industry and the government to encourage the development of society and economy, according to terms like the knowledge economy or knowledge society.
- In the framework theory of innovation helical each sector is represented as the form of a circle (helix) with the interconnected areas that demonstrate interactions.

- The theory was first proposed in the work of Henry Etzkowitz and Loet Leydesdorff in the early 1990s.
- Interactions between industry, universities and government have led to new intermediary institutions including offices for technology transfer as well as science parks.

### **Topic 13. WORLDWIDE OIL-REFINING CRUNCH**

*Important for Subject: Economy*



Prices were already rising prior to Russia entered Ukraine on February. 24. Since mid-March, however the cost of fuel has risen and crude prices have risen but only marginally.

- The main reason for this is an insufficient refinery capacity to convert crude into diesel and gasoline to meet the demand of the world.

#### **What's the cause of the worldwide oil refining crisis?**

- There's a shortage of refining facilities that can convert crude oil into gasoline or diesel to meet the world's high demand.



- As per the International Energy Agency, there enough refinement capacity to process approximately 100 million barrels oil per day, however around 20% of the capacity isn't being used.
- This is because of the lack of investment in nations like Latin America.
- Many refineries around the globe have been shut down due lower demand in the aftermath of the epidemic.
- Refining experts estimate that we have has lost an estimated 3.3 millions barrels refining capacity per day from the beginning of 2020.
- China has the biggest surplus of refining capacity since exported refined products are allowed under official quotas mostly granted to refining companies owned by the state, but not smaller, independent firms which hold a large portion of China's surplus capacity.
- Around 30 percent of Russia's refining capability was in idle in May.
- In Europe refineries are limited by the high cost of natural gas, which is the fuel for their activities.
- Certain refineries also rely on the use of vacuum gasoil as energy source for intermediate use.
- The loss from Russian vacuum gasoil has stopped certain from restarting gasoline-producing units.

#### **Who can benefit from this situation?**

- Refiners are particularly those who export lots of their fuel to other countries like US refiners, namely US-based Valero and Indian-based Reliance Industries.
- India refines over 5 million barrels per day, as per the IEA and has been purchasing cheap Russian crude to use for domestic consumption and export.
- The plan is to increase output by 450,000 by the year's end in the next year, the IEA declared.
- Asian Premium refers to an additional cost that is imposed by OPEC countries that are Asian countries when they sell oil, in contrast to Western countries.



## Topic 14. FOREIGN PORTFOLIO INVESTORS AND COMMODITY MARKET

*Important for Subject: Economy*



Market regulator SEBI has granted Foreign Portfolio investor (FPIs) to participate in the commodity derivatives market. Information: SEBI has allowed foreign companies to take part in trading on the Indian Exchange Traded Commodity Derivative market via the FPI option.

- FPIs can trade in any commodities that are not agricultural, and certain general agricultural commodities derivatives.
- Initially, FPIs can trade only for cash-settled contracts.
- The positions limits of FPIs (other than corporate bodies and family offices) will be on par with those currently in place for mutual funds.
- FPIs who fall under groups like family offices, individuals, and corporates will have an amount of position that is 20 percent of the maximum client-level limit on positions.
- SEBI has also confirmed the formation of Limited Purpose Clearing Corporation (LPCC) for the purpose of clearing and settlement of repo transactions for corporate bonds.
- Foreign Portfolio Investors FPI involves the investment by non-residents of Indian securities such as bonds, shares, convertible securities, corporate bonds as well as business trusts' units, and so on.
- The type of investor who invest with these instruments is referred to as foreign portfolio investors.
- **The applicant is able to obtain an FPI licenses in accordance with SEBI regulations, within one of two categories as follows: "Category I FPI" which is comprised of mainly: government and related investors such as central banks State agencies as well as sovereign wealth funds.**

- Multilateral organizations, or agencies.
- **"Category II FPI" which include:** appropriately regulated broad based funds such as mutual funds, investment trusts, insurance/reinsurance companies; appropriately regulated persons such as banks, asset management companies, investment managers/advisors, portfolio managers; broad based funds that are not appropriately regulated but whose investment manager is appropriately regulated.
- **Pension funds and university funds, and university-related endowments that are listed with SEBI as subaccounts of FIIs or FIIs "Category III FPI" which comprise:** all other entities that are not suitable under Category I and II FPIs, such as endowments, charitable society's foundations, charitable trusts corporations, trusts as well as family offices and individuals.
- Instead of using SEBI FPIs are now required to be registered with DDP (Designated Depository Participant).
- The application to the DDP is required by foreign investors for any among the categories above.

#### **What types of investments are permitted for an FPI?**

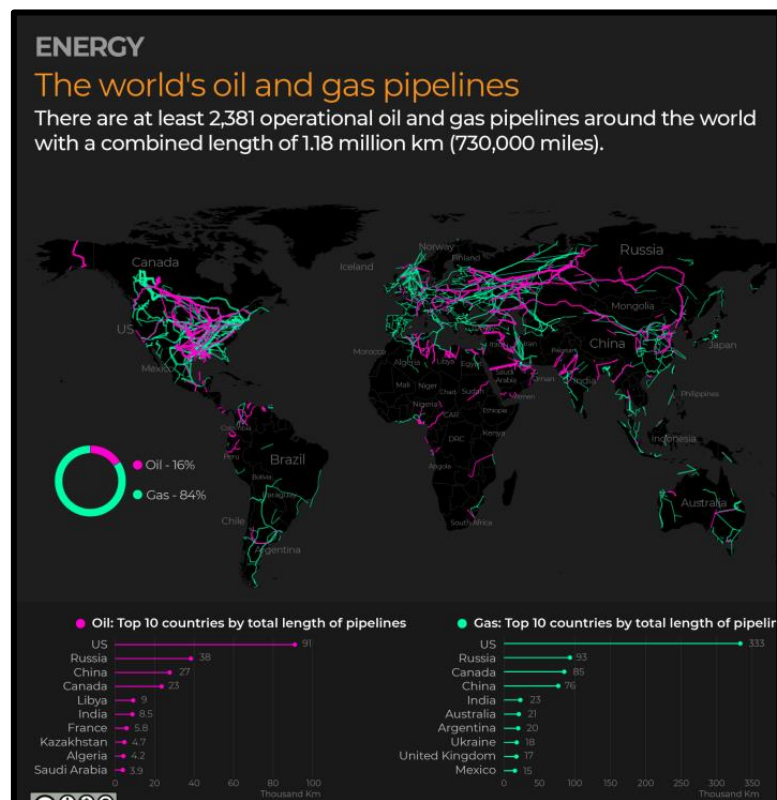
- FPIs can invest in shares and debt instruments (compulsorily convertible to equity) and warrants issued by companies that are listed or scheduled that are listed on a recognised market in India by way of secondary and primary markets.
- FPIs can also purchase security receipts from asset repair companies as well as securitised debt instruments the units of schemes floated by mutual funds in India (whether registered on a recognized market or not) or collective investment scheme listed and unlisted non-convertible bonds and debentures made by an Indian firm in the infrastructure sector, and unlisted bonds and debentures that are not convertible that are issued by an Indian company, subject to the guidelines.
- It is worth noting that FPIs are able to invest in non-convertible debentures that are not listed and bonds subject to limitations on investments in real estate businesses as well as capital market purchases of land.
- FPIs are considered appealing for debt investments as that FPI debt investments are not considered outside commercial loans, and are much more controlled.
- SEBI also allows FPIs the investment in Real estate Investment Trusts ("REITs") and in infrastructure trusts ("InvITs") and alternative investment funds in the category III.

- **Commodity trading:** The markets for commodities include trading i.e. trading and buying commodities as well as their derivative products.
- A commodity is any type of raw material or agricultural primary product that is able to be purchased or sold, for example, gold, wheat and crude oil.
- Commodities can be classified into two categories that are soft and hard.
- Hard commodities refer to the ones that require extraction from earth. Metals and minerals like copper, gold, silver and more fall in this category.
- Crude oil can also be classified as an extremely hard commodity.
- Soft commodities refer to edible oil, food grains as well as meat and livestock.
- Commodity Exchanges commodities exchange is a market that is regulated that allows commodities to be traded.
- Traders might choose to trade using Futures contracts instead of taking physically delivered commodities.
- The term "futures contract" refers to an arrangement to purchase or sell a specified amount of a particular commodity at a set price within a predetermined timeframe.
- **Futures trading in commodities is currently being conducted through six national exchanges:** Multi Commodity Exchange (MCX), Mumbai National Commodity and Derivatives Exchange (NCDEX), Mumbai National Multi Commodity Exchange (NMCE), Ahmedabad Indian Commodity Exchange (ICEX), Mumbai ACE Derivatives and Commodity Exchange, Mumbai Universal Commodity Exchange (UCX), Navi Mumbai Derivatives are the instruments that include the security of a debt instrument share or loan risk instrument, contract for the difference of any other type of security, and the contract gets its value from the price/index of the securities that are the basis.
- In the field of finance the term "derivative" refers to a contract that is derived through the operation of the source of the underlying entity.
- The underlying entity could be an index, asset, or interest rate.
- It is commonly referred to as "the "underlying".
- **Types of Futures and Forwards:** They is a type of financial contract that oblige buyers of the contracts to purchase an asset for an agreed price at the specified date in the future.
- Both futures and forwards are similar in terms of their nature.

- **Options:** Options give the purchaser of the contracts with the option however not the obligation to buy or sell the asset at a certain price.
- Based on the type of option the buyer is able to take advantage of the option prior to the date of maturity or any date prior to the maturity date.
- Swaps are contracts for derivatives which permit the swap in cash flow between parties.
- They typically require the swapping of a fixed cash flow to a floating flow of cash.
- **The most commonly used types of swaps are:** interest rates swaps and commodity swaps as well as currency swaps.

## Topic 15. CRUDE OIL REGULATION

*Important for Subject: Economy*



The Union Cabinet on Wednesday allowed companies like ONGC as well as Vedanta to market locally produced crude oil at any Indian refinery to turn the oil into fuel.

- **Effect:** Companies can transfer their crude oil into any private business on the Indian market, together with state-owned enterprises.

- Increase the output of the domestic crude oil since the fact that India's crude oil production has been in an ever-increasing decline.
- That despite being the third-largest oil consumer the country is dependent on imports to supply the majority of its needs.
- Contracts for oilfields that were awarded in 1999 allowed producers the right of selling oil government-appointed buyers of crude from fields that were older like Mumbai High of ONGC and Ravva of Vedanta.
- The requirement in Production Sharing Contracts (PSCs) for the selling of oil crude to the Government, or its nominees or government corporations is therefore removed.
- **Production Sharing Contract (PSC):** It is a term that is used to describe the Hydrocarbon industry.
- It refers to an arrangement that is signed between Contractor and Government which states that the Contractor assumes all risk of exploration as well as development and production costs in exchange for an agreed-upon part in (profit from) the production that results from this endeavour.
- The expenses incurred by the contractor can be recovered in the event the discovery of commercially viable resources.
- Therefore, PSC will be a tax-free system that is in place for extraction and development of hydrocarbons.
- Production Sharing Contracts were extensively adopted in the context of New Exploration and Licensing Policy (NELP) that was announced in 1997 by the Government in 1997 to facilitate the exploration of gas and oil resources within the country.
- They Production Sharing Contracts (PSCs) as part of NELP are founded on the concept that of "profit sharing".
- If a contractor finds gas or oil and is required to contribute to the Government the profits from the venture in accordance with the percentage he has specified in the offer.
- If a profit is not realized, no share is distributed to the Government in addition to royalty and cesses.
- Therefore, in a production sharing contracts (PSC) the Government's share is contingent upon the biddable share of profits from petroleum or gas after taking into account cost recovery.

- Also, PSC permits the contractor get back his expenses, before providing Government Government.
- Its share of revenue of the contractor, in the event that there is commercial discovery that leads to the production of (Not all drilling will lead to the discovery of gas or oil).
- So, a portion of the remaining revenues of the contractor is given to the Government.
- The PSC regime was changed with a revenue sharing contract model in 2016 through a Cabinet decision of the Government dated 10.03.2016.
- Government adopted a variant of the revenue sharing contract model on 10.03.2016 under the new fiscal regime for hydrocarbon exploration and production called, HELP or Hydrocarbon Exploration and Licensing Policy Under the new regime, the Government will not be concerned with the cost incurred and will receive a share of the gross revenue from the sale of oil, gas etc.
- Bidders will have to mention the revenue portion in their bids.
- This will be a crucial element in selecting the bid that is selected.

### **Topic 16. GUIDELINES BY RBI FOR NON-BANK BUY NOW PAY LATER (BNPL) COMPANIES**

*Important for Subject: Economy*

After putting limits on non-bank buy-now pay later (BNPL) firms The Reserve Bank of India (RBI) is expected to come up with guidelines for BNPL segment, which is making use of the prepayment instruments (PPIs) to offer short-term, interest-free loans customers who make online purchases.

- Non-bank buy-now-pay-later (BNPL) segment as per bankers they believe that it appears that the Reserve Bank is not happy with fintech firms using PPIs to fund their credit and avoiding the regulatory oversight.
- The banking regulator is currently in discussions with fintech companies to come up with a solution and bring the sector under the regulatory framework, so that PPIs can be used as an instrument to pay for goods and services, instead of a lending instrument.



- Although BNPL services have grown into a new mode of payment in addition to the traditional payment methods such as cards, UPI as well as net banking they have been largely unregulated by RBI regulation.
- The channel, which is supported by a few aggregators of payments and utilizing the accounts known as nodal (escrow account following authorization) to facilitate payments between an BNPL customer and merchant.
- The new norms will increase transparency to the fintech lending industry.
- The primary purpose of PPI licences PPI licence is to function in the capacity of a financial instrument but not as an instrument for credit.
- The current regulation is due to recent developments in which the latest business models for credit-based payment instruments were developed by businesses using PPI to facilitate transactions.
- RBI has expressed concern about the financing of PPI instruments PPI instruments using the credit line of an NBFC.
- A clear regulatory framework for large tech companies and fintechs and BNPL will help companies to plan for the long-term and make more investments into fintech in India.
- BNPL is the fastest-growing Indian online payment system that has the potential to have a major impact on major merchants, banks and credit card companies.
- Thanks to its simple on-boarding experience, its expansion to credit facilities, cost-effective arrangement for the consumer and the ease of repayment, BNPL is growing popular for young people earning income.
- A few of the most popular BNPL companies include LazyPay, Simpl, ZestMoney, Amazon Pay Later, Ola Money Postpaid, Paytm Postpaid, Flexmoney, Slice, UNI and EPayLater.

### **What is the way an BNPL firm operate?**

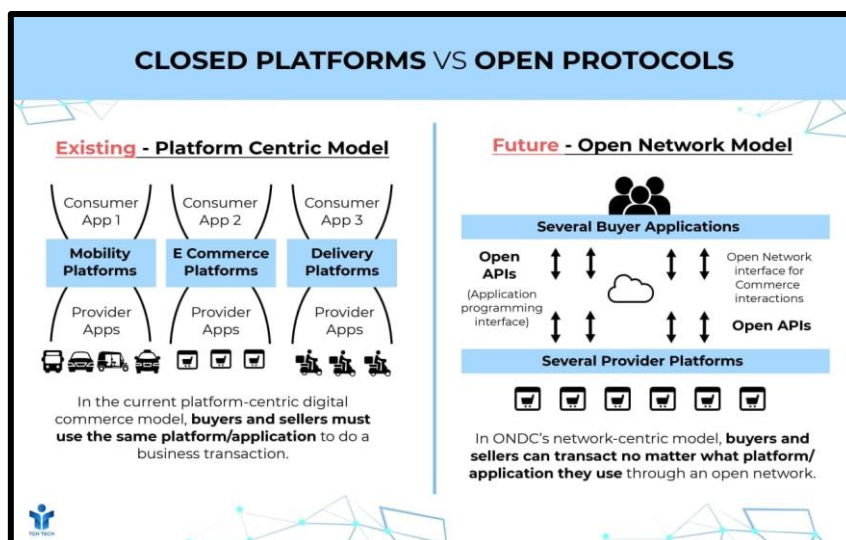
- Customers who have an BNPL card or account is able to make a purchase from any participating store and opt for the 'Buy now and pay later option.
- Following the purchase, the buyer is able to repay the BNPL company through a series of interest-free EMIs, not unlike credit cards, which have the highest cost of interest at 42 percent which can be spread over three months or in a lump sum amount.



- If the loan is not paid the interest will be due. If it is not paid, the BNPL company will reimburse the merchant right away.
- For a order of \$500, instead of paying the entire amount of Rs 500, they'd pay Rs 470 or even Rs 450 and keep the difference.
- The seller agrees to offer discounts for the BNPL firm.

## Topic 17. OPEN NETWORK FOR DIGITAL COMMERCE

*Important for Subject: Economy*



Government of India has announced the start in the first phase pilot of an open digital commerce network (ONDC) across five Indian cities in order of "democratise" the country's fast expanding digital e-commerce industry that is currently dominated the two U.S.-headquartered firms such as Amazon as well as Walmart.

### **What exactly is ONDC?**

- According to the strategy document on ONDC it's an organization that is not for profit and offers a network that will let local digital commerce stores across all industries to be found and utilized by any network-connected applications.
- It is not an aggregator app nor a hosting platform.
- Any of the existing digital commerce apps and platforms are able to choose to join and become member in ONDC. ONDC network.

- The ONDC is designed to facilitate the purchase of goods from all participating e-commerce platforms on a single platform.
- In the present, buyers have to visit Amazon for example to purchase an item from a seller who is on Amazon.
- According to ONDC the model, it is planned that buyers who is registered on one e-commerce site (for instance, Amazon) may purchase items from sellers of a competing e-commerce website (for instance, Flipkart).
- It is believed that the ONDC model is designed to duplicate the success of Unified Payments Interface (UPI) in the area of digital payments.
- UPI allows users to transfer money or money to another person regardless of the payment platform they're registered with.
- The concept of an open network extends beyond the retail industry and into all digital commerce area, including food, mobility, wholesale, delivery transportation, logistics urban services, etc.

#### **What's the status currently?**

- At present, ONDC is in its test phase in five cities including Delhi NCR, Bengaluru, Bhopal, Shillong and Coimbatore -- and has a goal of integrating 150 retailers.
- The government also has established an advisory committee to study possibilities of ONDC as an idea and advise the government on steps needed to help speed up its introduction.
- What are the potential advantages from ONDC It is expected that the ONDC will make it easier to standardize operations such as cataloguing inventory management, cataloguing management, and order fulfilment which will make it easier and more accessible for small-sized businesses to be discovered on the network and run their business.
- However experts have identified possible issues, like obtaining sufficient e-commerce platforms to sign up, and problems related to customer support and integration of payment.

## Topic 18. THE NATIONAL ANTI-PROFITEERING AUTHORITY

*Important for subject: Economy*

### Why in the news?

- The anti-profiteering authority of the nation has found the cosmetics and personal care giant L'oreal accountable for not communicating its GST rates reduction (28 percent to 18 percent during November of 2017) benefits for consumers.
- The authority also ordered it to deposit the amount as well as 18% interest to the consumers' welfare fund for the welfare of consumers.
- Half of the profited money with interest will be placed in the Central Consumer Welfare Fund, and the remaining portion would be deposited in the State in which the purchase was made.
- The authority also instructed to the Directorate General Anti-Profiteering (DGAP) to conduct additional inquiries.
- The NAA said that the business was only required to keep the price at which it sold the items and also change its GST rate from 28 percent to 18% within the software for billing.
- The company did increase the base price, while keeping the same price for selling.
- The NAA also ruled that an increasing the gram weight of a product is not at all comparable or comparable to the price reduction.
- The NAA also rejected the company's assertion that it can pass more benefits on certain products to compensate for the other, saying it's not permitted under the law.
- National Anti-profiteering Authority (NAA) is a statutory entity as per Section 171 of Central Goods and Services Tax Act 2017.
- The National Anti-profiteering Authority shall be directed by a senior officer with the rank of Secretary of the Government of India and shall comprise four technical members from the Centre and/or States.
- Apart from the Chairperson it is comprised of four Technical members as well as a standing Committee and Screening Committees in each State, along with the Directorate General of Safeguards in the Central Board of Excise & Customs (CBEC).
- **Authorities and their functions agency:** The authority's primary task is to ensure that the benefits that accrue from reduced GST rates for both items and services

provided in GST Council GST Council and of the Input tax credit are passed onto the beneficiaries through equivalent reductions in prices charged by the suppliers.

- The primary function of the Authority is to make sure that registered providers under GST law are not making a profit by imposing higher prices on customers in the name of GST.
- The legal responsibility of the NAA is to study and verify such activities of profiteering and recommend penalties, including the removal of registration.
- If it is determined that National Anti-profiteering Authority confirms the need to take anti-profiteering steps and has the authority to direct the company concerned to cut its costs or refund the unjust profit earned along with the interest to the purchaser of the services or goods.
- If the benefit is not able to be transferred to the person receiving it, it could be ordered to be placed into the Consumer Welfare Fund.
- In extreme circumstances, it is possible that National Anti-profiteering Authority can impose penalties on the insolvent business and may even require the removal of its registration under GST.
- The anti-profiteering system is a three-step procedure. There is a state-wide screening committee to handle local complaints, and a permanent committee to handle national-level complaints.
- In addition, there is an investigation conducted by the directorate general for anti-profiteering and a probe conducted by the body responsible for making decisions that is the NAA.
- **Suo moto action:** NAA is able to take note of any case of anti-profiteering, even without the need for a complaint from a person.
- This is since the chairman of the NAA can also be a civil servant and is also able to take note of the actions.
- Also, mock purchases may be conducted through NAA officers to look over the trader's invoice for any fraud.
- The decisions of the NAA are able to be appealed only through the high court.

**Topic 19. TYBHARAT NCAP DRAFT NOTIFICATION FILED – ALL CARS TO GET SAFETY RATING**

*Important for Subject: Economy*

No	Indian Car Tested By Global NCAP Till Jun 2022	Ranking as per Adult Safety	Points scored / 17	Child safety Rating	Points scored / 49	Total / 66
1	Tata Punch	5 ★★★★★	16.45	4 ★★★★★	40.89	57.34
2	Mahindra XUV300	5 ★★★★★	16.42	4 ★★★★★	37.44	53.86
3	Tata Altroz	5 ★★★★★	16.13	3 ★★★★★	29.00	45.13
4	Tata Nexon	5 ★★★★★	16.06	3 ★★★★★	25.00	41.06
5	Mahindra XUV700	5 ★★★★★	16.03	4 ★★★★★	41.66	57.69
6	Honda Jazz	4 ★★★★★	13.89	3 ★★★★★	31.54	45.43
7	Toyota Urban Cruiser	4 ★★★★★	13.52	3 ★★★★★	36.68	50.20
8	Mahindra Marazzo	4 ★★★★★	12.85	2 ★★★★★	22.22	35.07
9	VW Polo	4 ★★★★★	12.54	3 ★★★★★	29.91	42.45
10	Mahindra Thar	4 ★★★★★	12.52	4 ★★★★★	41.11	53.63
11	Tata Tiago	4 ★★★★★	12.52	3 ★★★★★	34.15	46.67
12	Tata Tigor	4 ★★★★★	12.52	3 ★★★★★	34.15	46.67
13	Maruti Brezza	4 ★★★★★	12.51	2 ★★★★★	17.93	30.44
14	Renault Kiger	4 ★★★★★	12.34	2 ★★★★★	21.05	33.39
15	Honda City 4th Gen	4 ★★★★★	12.03	4 ★★★★★	38.27	50.30
16	Tata Tigor EV	4 ★★★★★	12.00	4 ★★★★★	37.24	49.24
17	Nissan Magnite	4 ★★★★★	11.85	2 ★★★★★	24.88	36.73
18	Renault Triber	4 ★★★★★	11.62	3 ★★★★★	27.00	38.62
19	Kia Carens	3 ★★★★★	9.30	3 ★★★★★	30.99	40.29
20	Maruti Ertiga	3 ★★★★★	9.25	3 ★★★★★	25.16	34.41
21	Renault Duster	3 ★★★★★	9.00	2 ★★★★★	17.75	26.75
22	Hyundai i20	3 ★★★★★	8.84	3 ★★★★★	36.89	45.73
23	Kia Seltos	3 ★★★★★	8.03	2 ★★★★★	15.00	23.03
24	Hyundai Creta	3 ★★★★★	8.00	3 ★★★★★	28.29	36.29
25	Maruti Swift	2 ★★★★★	7.08	2 ★★★★★	16.23	23.31
26	Hyundai NIOS	2 ★★★★★	7.05	2 ★★★★★	15.00	22.05
27	Maruti WagonR	2 ★★★★★	6.93	2 ★★★★★	16.33	23.26
28	Hyundai Santro	2 ★★★★★	6.74	2 ★★★★★	15.00	21.74
29	Datsun Redi-Go	1 ★★★★★	8.36	2 ★★★★★	15.63	23.99
30	Renault Kwid	1 ★★★★★	8.28	1 ★★★★★	10.91	19.19
31	Maruti Eeco	0	1.13	2 ★★★★★	24.20	25.33
32	Maruti Alto	0	0.00	2 ★★★★★	18.21	18.21
33	Mahindra Scorpio	0	0.00	2 ★★★★★	16.73	16.73
34	Datsun Go	0	0.00	2 ★★★★★	15.06	15.06
35	Maruti S-Presso	0	0.00	2 ★★★★★	13.84	13.84

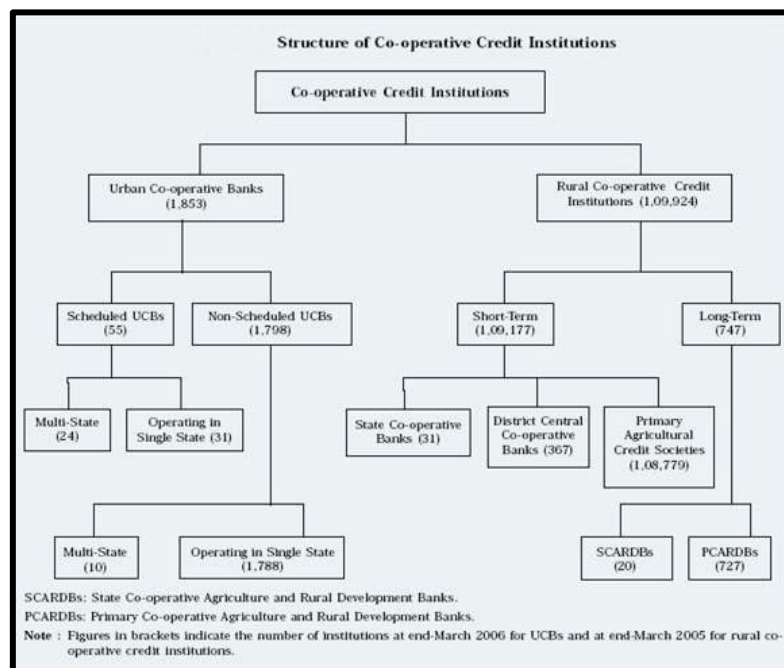
Infrastructure India is among the top countries worldwide in regards to the number of deaths and is third on the injured list of injuries. The process of determining the vehicle's safety has been entirely courtesy from GNCAP (Global New Vehicle Assessment Program).

- Today, the automotive industry is moving closer to testing vehicles on its own by Bharat NCAP launching.
- In the Ministry of Road Transport and Highways (MoRTH) has ratified Bharat NCAP's (New Car Assessment Program) draft.
- The cars tested will receive star ratings based upon the performance of crash tests.
- Bharat NCAP Tests Bharat NCAP testing procedure is compatible with international procedures.
- In addition existing Indian laws will be taken into.
- This will allow OEMs to test their vehicles in the nation's testing facilities in-house.

- Large-scale testing standards are designed to assist buyers. A stamp of approval sort of.
- Auto companies in India adhere to AIS-145 (automotive Indian standard-145) that enforces safety measures in vehicles, including seatbelts, airbags for passengers as well as warnings about speed limits.
- The standard has led to new standards in the Indian automotive industry. It was implemented first in July of 2019.
- **Global NCAP:** The US was the first country to introduce an information program that gave information about car safety regarding crashes to consumers in 1978.
- Then, several similar programs were established across different regions.
- In 2011, the United Kingdom-based non profit organization Towards Zero Foundation formed the Global NCAP to enhance cooperation between the different NCAPs.

## Topic 20. CO-OPERATIVE BANKS

*Important for Subject: Economy*



A Co-operative bank can be described as a financial entity that is owned by its members who are also the owners and patrons of their banks. The Cooperative Banks in India are licensed in accordance with the States Cooperative Societies Act.



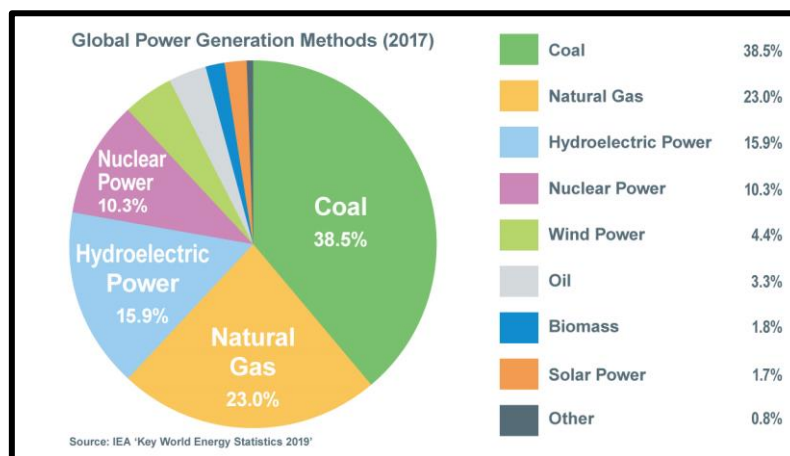
- Co-operative banks are controlled through the Reserve Bank of India (RBI) and are governed by the Banking Regulations Act 1949 Banking Laws (Co-operative Societies) Act 1955.
- **The characteristics of cooperative banks are: Customer-owned entities:** Cooperative members of banks are both customers and bank's owner.
- **Democratic Member Control:** Cooperative banks are controlled and owned by their members, who elect democratically a director board.
- The members usually are entitled to equal voting rights in accordance with the cooperative principle that states "one person, one vote".
- **Distribution of Profits:** A large portion of the annual profits and surpluses or benefits are generally allocated to create reserves.
- Part of the profit may be shared among the cooperative members subject to legally-enforceable and legal restrictions.
- **Financial Inclusion:** They've been a major factor to aid in financial integration of the unbanked rural people.
- **Urban Co-operative Banks:** The term Urban Co-operative Banks (UCBs) even though they are not defined in a formal manner refers to primary cooperative banks that are located in semi-urban and urban areas.
- They, up to 1996, were permitted to lend money to non-agricultural reasons.
- This distinction is no longer valid in the present.
- These banks were historically centered around local communities, communities and work groups.
- They mostly lent money to small-sized borrowers and companies.
- The scope of their operations has expanded considerably.
- New Developments In January 2020 the RBI updated the Supervisory Action Framework (SAF) for the UCBs.
- In June of 2020 the Central government passed an Ordinance that brought all multi-state and urban cooperative banking institutions under direct control of RBI.
- In the last few months, RBI created a committee which proposed a 4-tier structure for UCBs.
- Tier 1 includes all unit UCBs, as well as salaried UCBs (irrespective of the size of their deposits) and the other UCBs that have deposits of up to 100 crore.



- The second tier having deposits of UCBs between 100 crore to Rs 1,000 crore.
- Tier 3, having deposits of UCBs between 1,000 crore and Rs 10,000 crore , and Tier 4 with UCBs with deposits greater than 10,000 crore.
- The Centre has recently amended its Banking Regulation Act to bring the cooperative banking sector into the mainstream.
- As a result of the amendment UCBs will enjoy greater freedom in their business operations and be subject to a stricter regulation.
- A new umbrella organization for UCBs called the National Cooperative Finance Development Corporation (NCFDC) was set up in order to function as an autonomous organization.

## Topic 21. POWER SECTOR IN INDIA

*Important for Subject: Economy*



The Infrastructure on June 10 the power demand in India throughout the day surpassed record levels of 211.86 gigawatts (GW) The demand shot up by 25 % within a single year. In 2015 the average availability of power for rural regions was 12.5 minutes at the nation level.

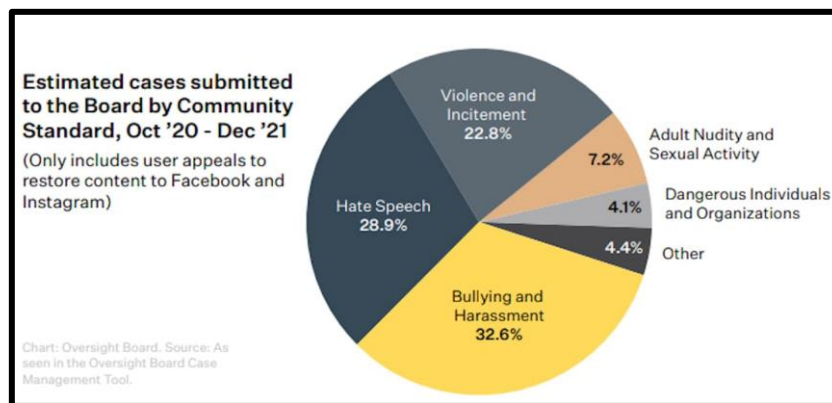
- The current average is 22.5 hours.
- **Revamped Distribution Sector Scheme (RDSS):** The CCEA approved a reforms-based and Results-linked Revamped Distribution Sector Scheme worth about Rs. 3.03 trillion, where the Center's part will be worth Rs. 97,631 crore.
- It is designed to enhance the efficiency of operations and financial viability of discoms (excluding private sector Discoms).

- The program will offer conditional financial aid to help strengthen the infrastructure for supply for discoms (power distribution companies).
- The financial aid will be contingent upon meeting the pre-qualifying requirements and on the meeting the minimum benchmarks.
- The existing reforms to the power sector like the Integrated Power Development Scheme, Deen Dayal Upadhyaya Gram Jyoti Yojana and Pradhan Mantri Sahaj Bijli Har Ghar Yojana will be incorporated into the umbrella program.
- The program will be in effect for 2025-26.
- It will be based on the action plan that was developed for each state, rather than an 'all-inclusive' model.
- Rural Electrification Corporation and Power Finance Corporation is the sole agency responsible for the implementation.
- Green Energy Open Access Rules Green Open access is available to all consumers and the maximum amount of Open Access Transaction has been reduced from 1MW up to 100kW in green power so that small consumers are able to buy renewable power via open access.
- Offer certainty regarding open access fees to be charged to Green Energy Open Access Consumers that include transmission charges for wheeling and transmission charges, a the cross-subsidy cap and standby fees.
- Transparency in the process of approval of an open access application via a national portal.
- The approval process must be completed within 15 days or it will be considered to be approved subject to the satisfaction of the technical specifications.
- **The determination of the green tariff:** The rate for green energy is determined by the appropriate Commission.
- It will consist of the average pooled cost for the purchase of renewable energy, any cross-subsidy fees when applicable, and service charges that cover the prudent costs for the distributor licensee in providing green energy to consumers.
- Banks of excess green energy in conjunction with the distribution licensee's permission.
- It is mandatory to establish a uniform renewable purchase obligation on all obligated entities within the distribution license.

- It also has included Green Hydrogen/Green Ammonia to full fill the requirements for its RPO.
- Customers will receive green certificates when they consume green energy.
- The cross subsidy surcharge as well as the additional charges will not apply in the case of green energy being used for the production of green ammonia and green hydrogen.

## **Topic 22. META OVERSIGHT BOARD REPORT RAISES CONCERNS**

*Important for Subject: Economy*

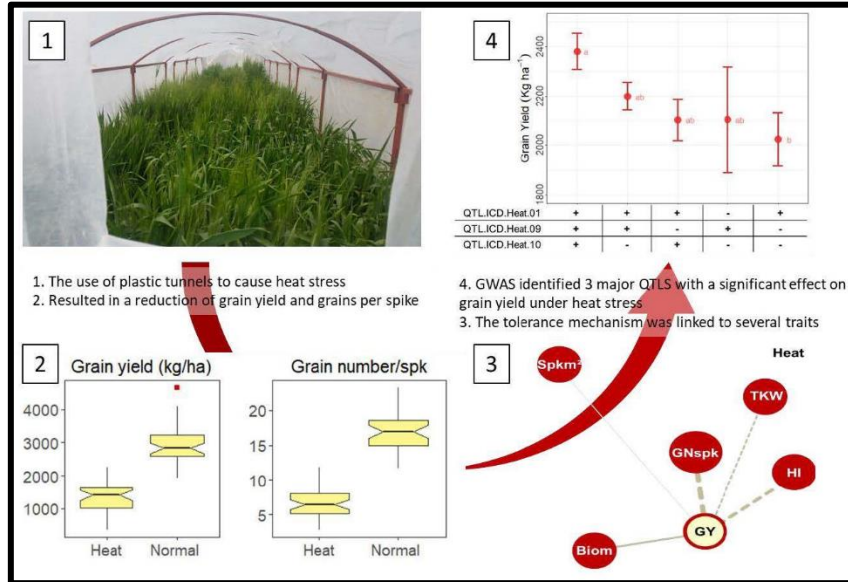


The Board noted the smaller number of appeals by users in India the country with the highest amount of Facebook as well as Instagram users.

- The reasons for the lower number of appeals from users outside Europe as well as the US and Canada could be a sign that the majority of people using Facebook and Instagram throughout the world do not know that they are able to appeal Meta's decisions on content moderation in the Board.
- Another reason could be the absence of resources to moderate content that is not in English.

**Topic 23. ICAR ADOPTS HEAT-TOLERANT CROPS, TIMELY SOWING TO PROTECT YIELD**

*Important for Subject: Environment*



The selection of the best varieties according to when the plant is being planted is one of the main factors in ensuring that the yield is protected when there is an extreme rise in temperature, as was evident during the recent heat waves.

- **Impact of the heat wave:** The heat wave was a part of the grain filling stage and the development phase of wheat, resulting in the swelling and yellowing of the grain, as well as forced maturity- with losses in the yield ranging between 15 to 25 percent.
- Strategies to address the problem The timely sowing and the adoption of the heat-tolerant varieties PBW03 DBW187 and DBW222 and spraying Potassium Nitrate with a concentration of 0.5 percent in the both the anthesis and boot leaf stages reduced yield loss.
- Technologies like mulching the ridge, sugarcane and furrow helped to conserve soil's moisture and reduced the strain.
- The heat-tolerant variety of wheat DBW173, Raj4120 and Raj4079 helped to reduce the loss of yield by 5-6 percent.
- They were part of the risk-prone 151 clusters that were created through ICAR via the National Innovations in Climate Resilient Agriculture (NICRA) program across the country, where techniques were tested that helped reduce the negative effects from heat wave.

- Potash sprays can help reduce the effects of heat waves on crops Potash assists in the process of osmo-revolution in plants.
- Because of osmotic pressure the turgidity of plants is maintained and helps regulate the opening of the pores.
- And when the process of evapotranspiration is not happening because of it, plants maintain the level of moisture.
- Potash aids in the transfer of nutrients from leaves to the grains.
- National Innovations in Climate Resilient Agriculture (NICRA) is can be described as a network project by the Indian Council of Agricultural Research (ICAR) was launched in the year the year 2011.
- The project's goal is to improve the resilience in Indian agricultural systems to the effects of climate change as well as vulnerability through research-based strategic planning and technology demonstration.
- Research on adaptation and mitigation includes livestock, crop fishing, and managing natural resources.
- The project is composed of four elements namely.
- Strategic Research, Technology Demonstration, Capacity Building and Sponsored/Competitive Grants

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### **Topic 24. GOVT TO SET UP CONTROL ROOMS TO ENFORCE SINGLE-USE PLASTIC BAN**

***Important for Subject: Environment***

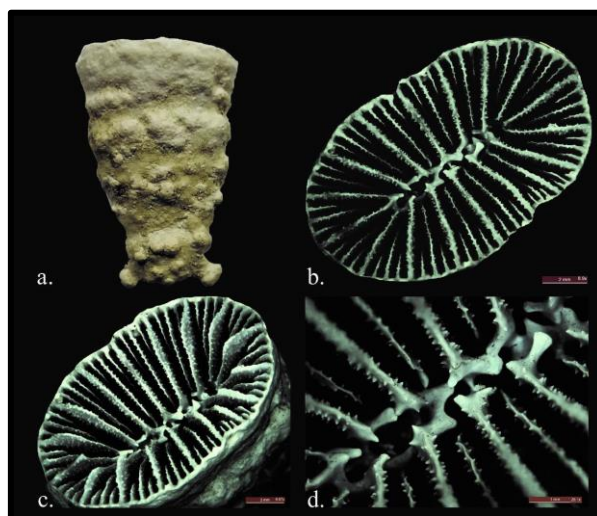
Pollution Due to the ban on single-use plastics coming into effect on July 1st The government will set up control rooms both at the national and states to ensure efficient enforcement.

- The list of prohibited items includes earbuds made of plastic sticks, sticks of plastic used to make balloons and flags from plastic candy sticks, ice-cream sticks polystyrene (thermocool) to decorate cups, plates glasses, cutlery, like knives, spoons, forks straws tray, wrappers, packaging films inside sweet boxes invitation cards cigarettes banners made of plastic or PVC smaller than 100 microns stirring devices.
- The control rooms are monitored by the Central Pollution Control Board.

- States along with Union Territories have been asked to establish borders checkpoints in order to stop the interstate transport of banned single-use plastic items.
- The items were chosen according to three factors namely their lack of use, their high potential for littering and the availability of alternatives.
- It is also prohibited to use these products by the public is also prohibited. Statisticians from the CPCB the production of plastic waste in 2020-21 was 41.26.997 tonnes.
- Per person, waste production was around 3 kilograms per year.
- There are 683 factories that produce single-use plastics with a total capacity of 2.44 lakh annually. The proportion of single-use plastics in the total plastic waste ranges between 10 to 35 percent.
- The government is making efforts to eliminate single-use plastics.
- The federal government has in the last year focused on encouraging the industry and MSMEs to find alternatives to plastics, like biodegradable plastics or compostable.
- The government has granted work to seven companies that are developing solutions that include biodegradable packaging material created from crop stubble and other.
- The CPCB has already issued certificates to 194 facilities for producing compostable plastics and 61 more applications are in process.
- The certified plants have the capacity of producing three lakh tons of compostable plastic each year.

## Topic 25. FOUR NEW CORALS RECORDED FROM INDIAN WATERS

*Important for Subject: Environment*





Scientists have identified four species of corals known as a zooxanthellate for the first time in Indian waters. These corals were found in areas of Andaman as well as Nicobar Islands

### What is Azooxanthellate corals?

- **Corals:** Coral polyps are tiny, fleshy sea anemones which live in subtropical and tropical oceans and oceans.
- They reside in shallow water together with microscopic algae known as Zooxanthellae.
- They have a symbiotic connection. is a type of corals which do not contain zooxanthellate.
- They get nutrition not from sun, but rather from the capture of different kinds of plankton.
- These coral groups comprise deep sea corals which have the largest proportion of the species reporting 200-1000 meters.
- They are not uncommon in the shallow waters of coastal areas.
- Zooxanthellate corals, however, are limited to shallow water.
- Algae have photosynthesis capabilities that provide corals' polyps by consuming carbon compounds, which provide them with energy.
- The polyps offer protection to Zooxanthellae.
- Coral reefs are among the most robust, sustainable, and pure ecosystems in the oceans of the world particularly in shallow waters of the coast.
- They provide a variety of services that are associated with human requirements and.
- There are around the 570 varieties of hard corals in India and nearly 90% are located in the waters around Andaman as well as Nicobar Islands.
- Coral reefs are found in India can be located in numerous regions, such as those in the Gulf of Kutch, Gulf of Mannar, Palk Bay, Andaman & Nicobar and Lakshadweep Islands The pristine and oldest coral ecosystem shares just 1% surface of the earth, but they are the habitat for more than 25 percent in marine species.

## **Topic 26. KERALA TO HAVE ITS OWN REGIONAL RED LIST OF BIRDS**

*Important for Subject: Environment*



Kerala will soon be able to have an own list red of bird species

- According to the world-wide IUCN Red List, Kerala has 35 threatened species of birds. In this, the Red-headed vulture and White-rumped vulture are both critically endangered.
- Steppe Eagle, Banasura Chilappan and Nilgiri Chilappan are threatened while 11 species are in danger.
- Kerala is expected to soon have the red lists of bird species.
- Kerala Bird Monitoring Collective Kerala Bird Monitoring Collective led by Kerala Agricultural University and the Bird Count India will conduct the regional assessment of the red list.
- When it is completed, Kerala will be the first State in the world to have a specific red list for a particular region of birds.
- The evaluation will be conducted in accordance with the International Union for Conservation of Nature (IUCN) guidelines.
- In the IUCN guidelines for the preparation of the red list include five key guidelines.
- The reduction in the size of the population over the course of ten year or 3 generations of time is among the most important guidelines.
- Geographical range on the basis of the area of occurrence, or the area of occupation is a different.
- Small size of population and declining, tiny or limited populations and quantitative analysis that indicates the likelihood of extinction in the wild are also factors.

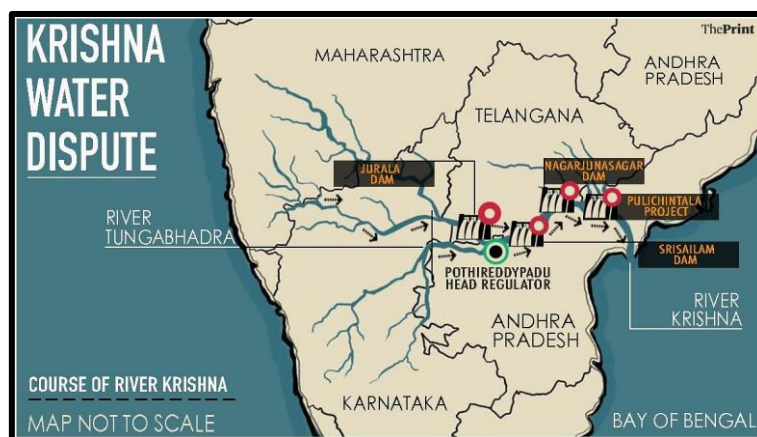
- This Kerala Bird Atlas accounts for almost 3000 records of 361 species, which includes the very rare species of 94 and 103 rare species.
- 140 common species, 44 widespread species, as well as 10 species that are the most common species.
- According to the atlas the majority of the species that are endemic to Kerala are found within areas of the Western Ghats while the threatened species are mostly found in the coastal areas.

### What is a redlist?

- In 1964, the IUCN Red List of threatened species transformed into the most complete information source about the global risk of extinction of fungus, animal and plants.
- This IUCN Red List is a vital indicator of the health of the planet's biodiversity.
- This IUCN Red List is used by wildlife departments, conservation related non-governmental organizations (NGOs) and conservation-related NGOs.
- According to the listing, biodiversity is decreasing.
- At present, there are over 138,300 species that are listed on the IUCN Red List, with more than 38,500 species at risk by extinction, which includes 41 percent of amphibians.
- 37 percent of sharks and fish and 34 percent of conifers, 33% of reef-building corals as well as 26% of mammals and 14% of birds.

## Topic 27. TN ASKS AP TO SUSPEND SUPPLY KRISHNA WATER

*Important for subject: Environment*



It is believed that the Krishna is the second biggest east-flowing river on the Peninsula. Its Krishna Basin extends over Andhra Pradesh, Telangana, Maharashtra and Karnataka covering an area in the range of ~2.6 million Sq.km. It is bordered by Balaghat range to the north and with the Eastern Ghats on the south and east, as well as by Western Ghats on the west.

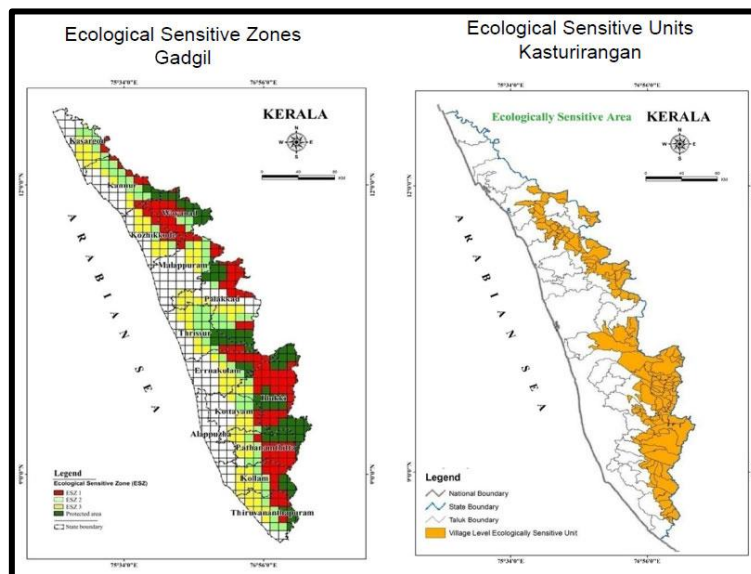
- This Krishna River rises from the Western Ghats near Jor village in the Satara district in Maharashtra at an altitude of 1,337 meters near the north of Mahabaleshwar.
- The length of the the river from its source to its outlet to the Bay of Bengal is 1,400 kilometers.
- The majority of the basin is occupied by agricultural land, accounting for 75.86 percent of the area.
- The Krishna creates a vast delta that has a shoreline of around 120 kilometers.
- The Krishna delta is believed to be merging with the delta formed by the Godavari and extends for about 35 km to the sea.
- The issue is the Krishna River water dispute Telangana as well as Andhra Pradesh share stretches of the Krishna and the Godavari and have their own tributaries.
- The two states are both proposing a variety of new projects, without obtaining approval of the River Boards as well as they have also not sought approval from the Central Water Commission and the Apex Council, as required through The Andhra Pradesh Reorganisation Act, 2014.
- Andhra Pradesh alleges that Telangana has been taking Krishna waters from the four project which include Jurala, Srisaillam, NagarjunaSagar and Pulichintala to power hydropower production without permission by the Krishna River Management Board (KRMB) the autonomous body set up in the aftermath of the bifurcation of the state to oversee and regulate the flow of water within the Krishna basin.
- Telangana declared that it will not accept Pothireddypadu project that it claims is being constructed illegally through government officials of the Andhra Pradesh government on Krishna River, without environmental clearances or the allocation of a single drop of water to the project, or any authorization granted by the Green Tribunal.
- **Krishna River Management Board:** As a result of the authority given by section 85 under the Andhra Pradesh Reorganization Act 2014 The Central Government

constituted an autonomous KRMB for the management control, regulation, maintenance, and operation of these projects.

- **Apex Council Section 84(1):** Of the ANDHRA PRADESH REORGANIZATION Act and the Central Government shall, on and from the date of the appointment create the Apex Council for the supervision of the operation of the Krishna River Management Board.
- Its Apex Council shall consist of Minister of Water Resources, Government of India-Chairperson, Chief Minister of State of Andhra Pradesh-Member Chief Minister of State of Telangana - Member.
- State-to-state water disputes Disputes Section 262 of the Constitution stipulates the adjudication of interstate water disputes.
- This means that Parliament is able to in law make provision for the resolution of any dispute or claim regarding the distribution, use and control of water of any inter-state river or the river valley.
- Parliament could also make it clear it is not the Supreme Court nor any other tribunal is able to exercise any jurisdiction to adjudicate any controversy or complaint.
- Parliament has passed two laws which are that is the River Boards Act (1956) and the Inter-State Water Disputes Act (1956).
- The River Boards Act provides for the creation rivers boards through the Central government for the control and development of interstate river and valleys in rivers.
- The River Board is established on the demand of the state governments in charge to provide advice.
- It is a part of the Inter-State Water Disputes Act empowers the Central government to establish an ad-hoc tribunal to adjudicate disputes between two or more states with respect to the waters of an interstate river or valley.
- The tribunal's decision has no effect and is binding to both sides to the dispute. It is not is the Supreme Court nor any other court

## Topic 28. PROTEST AGAINST ECO-SENSITIVE ZONES

*Important for subject: Subject: Environment*



Environmental act environmental act Supreme Court has ordered the creation of Eco-Sensitive zones of 1 km around all protected areas national parks and wildlife sanctuaries.

- The farmers of Kerala continue to protest in various high ranges in the state, in protest of the recent Supreme Court decision to create 1-km Eco-Sensitive zones surrounding all protected areas, wildlife sanctuaries, and national parks.
- Eco-Sensitive Zones According to the National Wildlife Action Plan (2002-2016) released from the Union Ministry of Environment, Forest and Climate Change, the land that is within 10 km from the borders of the national park and sanctuary areas will be declared Eco-Sensitive zones or Eco-Sensitive zones (ESZ).
- For areas with fragile corridors, connectivity and ecologically significant patches important for linking landscapes as well as areas of greater than 10 km wide can be included within Eco-sensitive zones.
- The primary goal is to regulate specific activities in National Parks and Wildlife Sanctuaries in order to limit the negative impact of such actions on the delicate ecosystems that are a part of the protected zones.
- In addition, these areas are designed to function as a transition zone between zones that require more protection to those that need less protection.
- **Activities permitted within ESZs Prohibited Activities:** Commercial mining or sawmills industry that pollute (air and soil, water, and so on) Establishment of

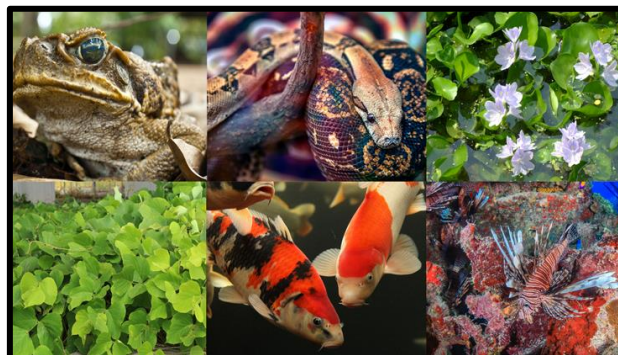


hydroelectric power projects that are major (HEP) commercial utilization of wood, Tourism activities such as hot-air balloons that fly that fly over the National Park, discharge of effluents, or any solid waste, or the production of harmful substances.

- **Activities that are regulated:** The cutting of trees, the establishment of resorts and hotels business use of natural waters, construction electric cables radical alteration of the system of agriculture, e.g. adopting pesticides and heavy technology and the broadening roads.
- **The permitted activities include:** ongoing agriculture or horticulture practices, water harvesting for rain, organic agriculture and the use of sustainable energy resources, the adoption of green technology in all of the activities.
- **Recent developments:** SC while marking 1km as a compulsory ESZ added that no permanent structures or mining project will be allowed in the ESZ.
- The residents of Kerala protest to exclude all human settlements from ESZ rule.
- This is because people living in the settlements that are populated with people in these areas believed that ESZ could restrict their agriculture and other activities.

## Topic 29. INVASIVE SPECIES

*Important for Subject: Environment*



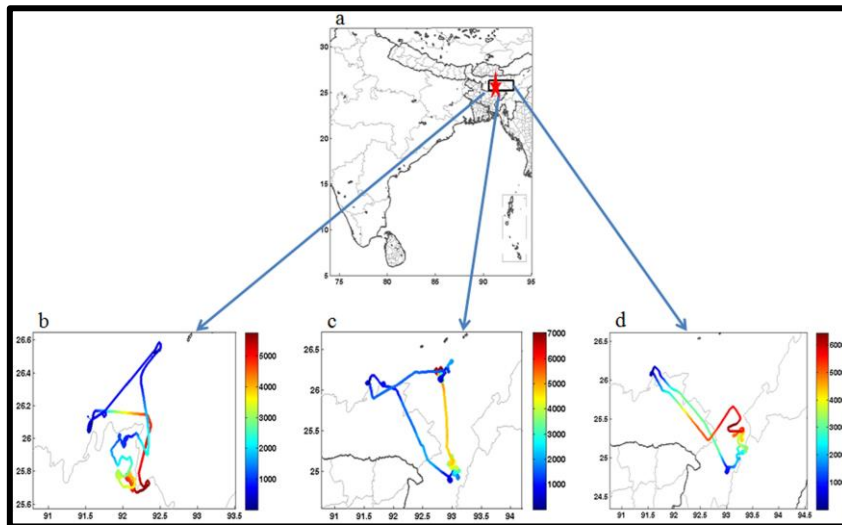
It is a Vitamin D3-rich weed, and an invasive plant with roots that wild boars adore to gorge on are just two of the 18 invasive species that have suffocated in the Kaziranga National Park, as well as Tiger Reserve, the best-known location of the larger one-horned rhinoceros in the Earth.

- The impact of these species is a major concern for Kaziranga National Park Kaziranga has to contend with poaching, encroachment and floods every year for a long time.

- Along with the green invaders, like Ipomoea (Ipomoeacarnea) as well as mimosa (Mimosa melanaica) Invasive plants quietly take over the landscape and destroying indigenous grasses, plants, and trees. Invasive plants quickly clog pathways and grasslands.
- The herbivores typically avoid invading plants that regenerate rapidly and are threatening to erode the native species.
- Certain invaders have a negative impact on the landscape when being underwater for a long time, typically for two months each monsoon. Some weeds are herbaceous but their harmful effects far outweigh their value.
- For example, wild boars are known to devour the succulent rootlets of Leea macrophylla, also known as 'kukurathengia' that are quickly clogging roads and grasslands.
- Another example could be Cestrum diurnum or day-blooming Jasmine that is of West Indies origin "coming up gregariously" on the Brahmaputra Sandbars. It is also a good food source for Vitamin D3.
- **Alien Invasive species:** An alien is one that is introduced outside its natural distribution.
- A species is considered to be invasive in the event that they are introduced intentionally or accidentally in their natural habitat in a way that they compete with native species and disturb the balance of nature.
- The term "invasive aliens" (IAS) are species of plants, animals or other organisms that are introduced in areas that are not their natural habitat which negatively affect native biodiversity or ecosystem services as well as human health.
- Examples of invasive species are found in India Common water Hyacinth Prosopis Juliflora Napier grass Indian Jujube Mimosa pigra Indian Lantana

**Topic 30. SCIENTISTS UNPACK THE INFLUENCE OF BLACK CARBON AEROSOLS ON RAINFALL IN NORTHEAST INDIA**

*Important for Subject: Environment*



Understanding the fundamentals of the transition to energy will be crucial to unravelling the role played by aerosols (mainly black carbon) in altering atmospheric processes, including those that trigger the rain that falls in the northeast of India.

**What is Black Carbon?**

- It is created through the incomplete combustion of biofuels, fossil fuels as well as biofuels, biomass (caused by human activity) and also by natural causes like wildfires.
- It is the predominant form of light-absorbing particles that is found in the atmosphere.
- It heats the atmosphere as it absorbs sunlight (solar energy).
- It is in the air for some days or weeks as opposed to 100 years or more for carbon dioxide.
- Carbon dioxide is a significant short-term cause of global warming.
- It is able to trap heat of a million times that of carbon dioxide.
- It is able to travel large distances by air currents.
- The warming effects from black carbon aerosols are second to carbon dioxide.

**What are the main sources for Black Carbon?**

- The burning of biomass in agriculture, particularly during shifting cultivation practices in areas of hilly terrain in northeast India contributes to significant levels of black carbon.

- Another important sources include the transport of black carbon from Indo Gangetic Plain Vehicles are the main source of black carbon in urban regions.
- The consumption of fuel in residential areas (in the forms of biomass burning and lamps made of kerosene for lighting) proved to be the most significant sources of carbon black in urban and rural areas.
- Impacts the northeast region of India Research has shown that increasing black carbon emissions cause an increase in rainfall intensity at low intensity as well as causing severe rain during the monsoon season across northeast India.
- The presence of greater amounts of aerosol hinders rain formation which, in turn, decreases rain that is less intense.
- However, an rise in black carbon levels has increased the levels of moisture.
- The increased black carbon levels also help in transferring more moisture to in the higher atmosphere.
- The cloud water is moved towards the upper air, which is where it transforms into hail or ice.
- The melting of ice/hail can cause extreme rain.
- **Methods to cut down on Black Carbon:** To electrify urban transportation. Switch from coal to renewable energy and upgrade vehicles to the most current standards for auto emissions (Bharat stage VI) Switch to cleaner cooking energy sources and cleaner brick production techniques.
- Implementing new policies in the future and integrating them into regional cooperation between states and neighbouring nations (i.e., Nepal, Bhutan, Bangladesh, and Pakistan) can yield better advantages

### **Topic 31. HOW ARE FIREFLIES AFFECTED BY LIGHT POLLUTION?**

*Important for Subject: Environment*



The study shows that the number of fireflies is reduced when near artificial light sources. The closer one is to the source of light the less fireflies there are.

### What are fireflies?

- They are part of the Lampyridae family.
- Lampyridae Fireflies use their bioluminescence which is a chemical reaction that creates light for mating.
- Adults of one or both genders (depending on the species) emit distinct flash patterns that are viewed by the other sex.
- Low light is required to reproduce.
- Fireflies can be found in temperate and tropical areas in marshes and wetlands close to forests.
- Adults of fireflies are short-lived, and their life lengths ranging from one month to a week.

### What happens when fireflies compete with artificial light?

- In the season of mating when they are mating, fireflies will flash later in the afternoon at sunset, or shortly after sunset, as the light levels are low in the absence of artificial light, fireflies attempt to shine more brighter in order to fight artificial light.
- This decreases the likelihood of securing a partner and adversely affects reproduction rates.
- Fireflies are extremely sensitive to lighting, because their courtship activities are limited to certain time of day.
- The biggest dangers for fireflies are loss of habitat as well as light pollution from artificial light in the night, and pesticides.
- **Role of Fireflies within an ecosystem:**
- The ecosystem is composed of interconnected components.
- Every link within the chain relies on the other so the disappearance of any species weakens the other links.
- The larvae of fireflies feed on snails, slugs and earthworms and mites, keeping their populations in check.
- A high number of invertebrates cause damage to the growth of the vegetation.

- This impacts animals that feed on the vegetation Fireflies as well as other species, keep an equilibrium in the ecosystem.
- Fireflies' luminescent genes can be found in many applications in tests for food safety, as well as forensics.

### **Topic 32. MULTILATERAL FUND OFFERS \$5.33 BILLION OVER 4 YEARS TO HELP SOLVE BIODIVERSITY WOES**

*Important for Subject: Environment*



The Global Environment Facility, the only multilateral funding fund that is focused solely in the field of biodiversity, committed to fund \$5.33 billion for the following four years in order to address the issues relating to biodiversity across the globe.

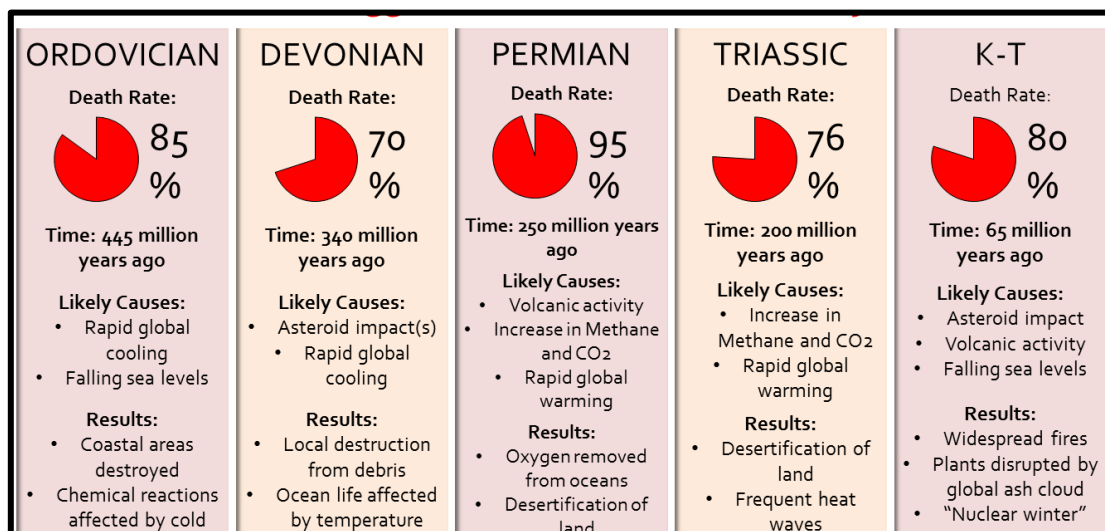
- **Global Environment Facility:** The Global Environment Facility was created on the eve of 1991 Rio Earth Summit, is an agent for action in the environment.
- It's an unrivalled partnership between 18 agencies, which includes United Nations agencies, multilateral development banks, local entities as well as international NGOs working together with 183 countries to tackle the most difficult environmental challenges.
- It's an investment mechanism for five important international environmental conventions.
- Minamata Convention on Mercury,
- of the Stockholm Convention regarding persistent organic Pollutants (POPs),
- United Nations Convention on Biological Diversity (UNCBD),
- The United Nations Convention to Combat Desertification (UNCCD)
- The United Nations Framework Convention on Climate Change (UNFCCC)



- It's also an INNOVATOR and CATALYST, which supports multi-stakeholder coalitions to safeguard the ecosystems that are threatened on land and in the oceans, create more sustainable cities, improve food security, and help promote green energy to create a prosperous and climate-friendly world.
- GEF Trust Fund was established to address our planet's most pressing environmental challenges.
- The funds are open to countries in transition and developing countries that have economies in transition to achieve the goals of international environmental agreements and conventions.
- **Aichi Biodiversity targets:** It was created by the Convention on Biological Diversity (CBD) to safeguard and preserve the biodiversity that is essential to the security of food supply and health, as well as clean water.
- It is officially referred to as "strategic plan for Biodiversity 2011 to 2020" and included a set of 20 ambitious, yet realistic goals collectively referred to as the Aichi Targets in the field of biodiversity.

**Topic 33. OCEANS GREAT DYING 2.0: EARTH'S CLIMATE MODERATOR IS WARMING FASTER**

*Important for Subject: Geography*



The oceans are heating up as they are crossing their natural capacity to absorb carbon and the atmospheric heat generated by GHG emissions. Role of Ocean the oceans:

- They regulate the global climate and regulate the temperature of the planet, causing weather-related events such as storms, rains, cyclones, droughts and floods.
- Around 50-80 percent of the oxygen that is produced on Earth can be traced back to the sea.
- The primary role that oceans have is as a carbon sink.
- Four-fifths of the carbon cycle flows through them.
- As world's carbon dioxide (GHG) emissions due to human activities have grown exponentially as the oceans absorb over 90 percent of global temperature rise induced by humans in the 1970s of the 1970s.
- The Impact of Climate Change on Oceans The changes in the ocean's temperature and currents could cause changes in the patterns of climate around the globe.
- With warming and temperatures below the surface is also rising and impacts the species.
- The presence of more atmospheric carbon is that there is more carbon in the oceans, which is an important sink.
- Once a certain amount is reached, it increases the amount of carbon dissolved.
- This could alter the chemical composition of seawater, creating acidity, thereby altering the foundations of the vibrant life forms in the oceans to toxic acidic water is the reason that many species such as shellfish and coral will not be able to construct their shells and skeletons which could lead to the collapse of the population.
- The largest warming occurred in the oceans in the southern region.
- Around 90 percent of the global ocean's net warming was attributed to the northern hemisphere.
- This region has more landmasses, and consequently more aerosols, which are believed to block heat from being in the ocean.
- Natural variability such as ENSO and Pacific Decadal Oscillation and Atlantic multi decadal oscillation generated these variations.

### What's ENSO?

- It is the El Nino-Southern Oscillation (ENSO) is a pattern of climate that occurs regularly that causes changes within the temperatures of the waters in the eastern and central parts of the oceans of the tropical Pacific Ocean.

- In periods that range from 3 to 7 years surface waters that cover a huge area of Pacific Ocean are tropical.
- Pacific Ocean warm or cool between 1 and 3 degrees Celsius, as compared to normal.
- This fluctuating warming and cooling pattern, commonly referred to as an ENSO cycle, directly impacts rainfall patterns in the tropical tropics.
- Pacific decadal oscillation.
- Pacific Decadal Oscillation (PDO) is usually described as a prolonged El Niño-like pattern of Pacific climate variability.
- Extremes of this PDO pattern are defined by a wide range of changes across the Pacific Basin and in the North American climate.
- Alongside the ENSO phenomenon the extremes of the PDO are classified as either cool or warm, in accordance with the definition of temperature anomalies observed in the ocean in the tropical and northeast regions.
- Pacific Ocean Atlantic multi-decadal oscillation.
- The Atlantic Multi-decadal Oscillation (AMO) is classified as a coherent model of natural variability that occurs within the North Atlantic Ocean with an estimated duration of between 60 and 80 years.
- It is based on average anomalies in the sea's surface temperature (SST) within the North Atlantic basin, typically in the range of the range of 0-80N.

### **Topic 34. UN OCEAN CONFERENCE**

*Important for Subject: Geography*



Leaders from 120 nations are gathering in Lisbon to try to come to an agreement that will save the world's oceans from climate change taking its cost. Oceans are under a serious threat from pollution, global warming acidification, and other challenges. The governments of Kenya and Portugal will host this Ocean Conference. The conference sought to determine ways to encourage the achievement of Sustainable Development Goal 14.

- Risks of Pollution, overfishing and the impacts of climate change seriously harm the condition of the seas.
- For instance, as the oceans warm and become increasingly acidic, the diversity of our oceans is diminished and the changing ocean circulation patterns will lead to more frequent droughts and storms.
- Each year, around 8 million tonnes of garbage from the ocean are released into the ocean, and get absorbed into circular ocean circulation.
- This results in the contamination of the sediments that lie at the bottom of the ocean and leads to the plastic waste to get absorbed in the food chain of the marine.
- It is possible that oceans will end up with greater quantities of plastic than fish in 2050, if there is no action taken.
- Important habitats like coral reefs are in danger and noise pollution poses dangerous to whales, dolphins as well as other species.
- In addition, nearly 90% of the fish stocks are either overfished or are fully exploited.
- This costs over \$80 billion per year in lost revenue.
- Program of Conference the Ocean conference will adopt a statement that will not have any binding effect on the signatories, but it could aid in the implementation and facilitating conservation and protection of the oceans as well as their natural resources.
- The declaration is being developed in the context of United Convention on the Law of the Sea. It is the primary international agreement that governs human marine activities.
- India participates in the Ocean conference from India Secretary of Earth Sciences, will attend the conference.
- He will be speaking on the topic "Scaling up ocean action based on science and innovation for the implementation of goal 14: stocktaking, partnerships and solutions".

- India will offer science- and innovative solutions to implement Goal 14.

### **Topic 35. BACK TO BACK DROUGHTS IN EASTERN AFRICA**

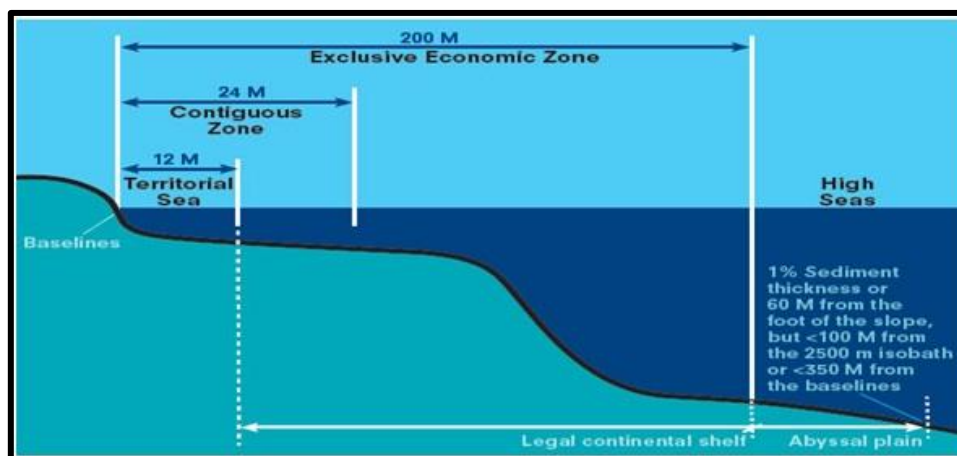
*Important for Subject: Geography*

Mapping The Horn of Africa (HoA) is also called Somali Peninsula, also known as Somali Peninsula, is a huge peninsula situated in East Africa.

- It is located in the easternmost region of the African mainland it is the fourth biggest peninsula on earth.
- It is comprised comprising Ethiopia, Eritrea, Somalia as well as Djibouti Recurrent droughts are the main cause.
- Changes in climate affect rainfall levels across the Horn of Africa.
- Human-induced warming raises temperatures of the west of Pacific Ocean, leading to concerns about the amount of rainfall in eastern Kenya, Somalia, and Ethiopia.

### **Topic 36. GLOBAL ATTENTION ON MORATORIUM ON DEEP-SEA MINING**

*Important for Subject: Geography*



While the UN Ocean Conference gets underway and the world's attention shifts to the ocean, opposition from the political world to the deep-sea mining industry grows in strength.

**What is Dee sea mining?**

- It's the process of extracting important minerals and metals by stripping large areas of the ocean floor by using automated cutting equipment

### What will be mined?

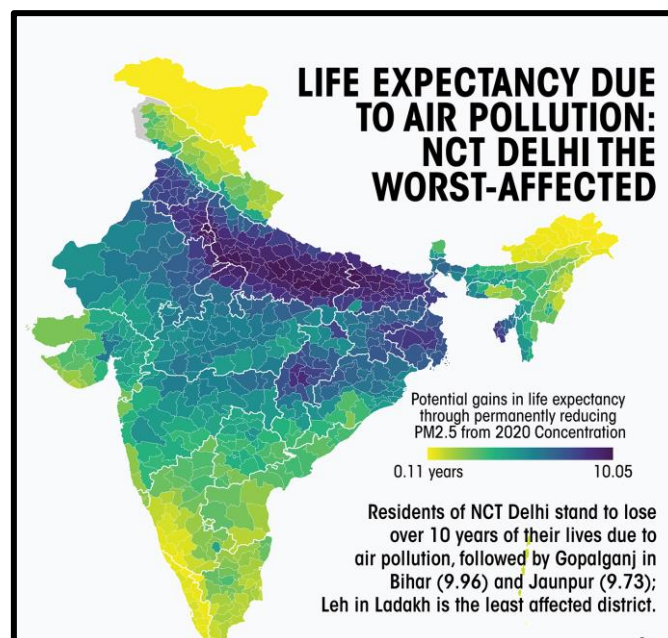
- Copper, nickel manganese, cobalt gold, zinc and other rare-earth minerals and metals that are largely utilized in electronic devices.
- Natural hydrothermal geysers that are located on the ocean's deep floor periodically release high quantities of minerals and metals from the core of the earth, producing valuable seams on ocean floor that could yield as much as 10 times the amount of precious metals found in similar mines on land.
- Nodules made of polymetallic (also called manganese nodules) are potato-shaped, mostly porous nodules which are abundantly over the seafloor of the world's oceans deep in the sea.
- **Composition:** In addition to manganese and iron, they are also a source of copper, nickel molybdenum, lead, vanadium, cadmium and titanium, and nickel, of which as well as copper, cobalt and nickel are believed to be of both economic and strategic significance.
- **Main environmental impact of Deep sea Mining:** Destruction of natural land forms and the wildlife they host, compaction of the sea floor Creation of sediment plumes that disrupt aquatic life Nearby impacts include noise, electromagnetic effects, disruption of the larval supply, contamination and fluid flow changes Deep-water mining will alter the geochemical underpinnings of ocean life, cause the loss of important genetic resources.
- The difficult of deep-sea mining operations also make accidents, pollution and contamination likely United Nations Convention on the Law of the Sea (UNCLOS).
- **United Nations Convention on the Law of the Sea (UNCLOS) 1982:** It also called the Law of the Sea Convention or the Law of the Sea Treaty It is an international agreement that establishes the legal framework for marine and maritime activities.
- **It divides marine areas into five main zones namely:** Internal Waters, Territorial Sea, Contiguous Zone, Exclusive Economic Zone (EEZ) and the High Seas UNCLOS does not deal with matters of territorial disputes or to resolve issues of sovereignty, as that field is governed by rules of customary international law on the acquisition and loss of territory.



- The United Nations Sustainable Development Goal 14 has a target regarding conservative and sustainable use of oceans and their resources.
- **in line with UNCLOS legal framework International Seabed Authority:** It is an autonomous international organization established under the 1982 United Nations Convention on the Law of the Sea (UNCLOS) ISA is the organization through which States Parties to UNCLOS organize and control all mineral-resources-related activities in the Area for the benefit of mankind as a whole ISA which has its headquarters in Kingston, Jamaica, came into existence on 16 November 1994, upon the entry into force of UNCLOS All States Parties to UNCLOS are ipso factomembers of ISA.
- As of the year 2020, ISA has 168 members and 167 members, which includes 167 member states as well as members of the European Union India is a member of the ISA

**Topic 37. DENSE FOG EPISODES TWICE MORE FREQUENT IN BIHAR, UTTAR PRADESH THAN DELHI-NCR: STUDY**

*Important for Subject: Geography*



Dense fog events were more than twice common within Bihar in Bihar and Uttar Pradesh than in the Delhi-National Capital Region (NCR) between 2002 and 2020 A new study has found

## What is Fog?

- Fog is an evaporation cloud that touches the ground. Fog can be either thin or thick, which means that people are unable to see through it.
- Fog appears as water vapour, also known as water in its gaseous state, condenses.
- In the process of condensation, water vapor molecules mix to form tiny liquid droplets that hang from the air.
- It is possible to see fog due to these tiny droplets of water.

## Fog is created?

- Fog is formed when it's extremely humid, extremely humid.
  - It must be plenty of water vapor in the air to cause fog to develop.
  - For fog to form, dust or any kind of air pollution has to be present in the air.
  - The condensation of water vapor occurs around these tiny solid particles.
  - **Fog Vs. Mist:** Fog has a higher density than mist. It is therefore larger and more dense than mist.
  - There's more water molecules within the same space within fog.
  - **The effects of fog:** It reduces the surface visibility to less than 100 metres during fog.
  - And trains are canceled or suffer massive delays.
  - Vehicular accidents can also happen.
-

**Topic 38. SOIL CONSERVATION FOR FOOD SECURITY**

*Important for Subject: Geography*



Agriculture's modernisation has produced enormous benefits in terms of increasing food security through improved crop production, but in the process, creating soil erosion. The extensive use of fertilisers and pesticides have led to the decline of soil health as well as the contamination of water bodies as well as in the food chain.

- These can pose grave health hazards to humans and livestock.
- Degradation of soils on an unprecedented magnitude is a major obstacle in the sustainable development of our food supply.
- Statistics A third of the soils on the planet are already degraded, and it is alarming to note that around 90% of them will be destroyed in 2050, if no appropriate actions are taken.
- Although soil degradation is estimated to occur in 145 million hectares of India however, it has been estimated that 96.40 million acres -- or 30% of the overall surface is affected by the degradation of land.
- Globally, the biophysical state of 5,670 million acres of land is declining, and of that 1660 million acres (29 percent) is due to human-caused soil degradation, as per the FAO's State of Land, Soil and Water report.
- The annual global chemical production in industrial settings has increased by a third at the start at the beginning of this century up to 2.3 billion tonnes.

- It is predicted to grow by 85 percent until the time the decade is over.
- Another problem is salinisation that affects 160 million hectares of agricultural land across the globe.
- The history of Soil Conservation in India.
- The first initiatives in soil conservation in India go back to precolonial times.
- The first programs to conserve soil and water were introduced during the 20th century by the British Administration.
- After independence, India's First Five Year Plan (1951) included measures for soil conservation to fight soil erosion and degradation, and enhance the lives of the rural populations.
- The 1990s saw the overhaul of the earlier soil conservation programs when the government announced its National Watershed Development Project for Rainfed Areas (NWDPRAs).
- The focus of the project was on creation of contoured bunds and trenching, as well as sowing silvipasture cultivation and afforestation throughout India.
- In 2013, in 2013 the National Mission for Sustainable Agriculture (NMSA) that works in conjunction with the MGNREGA.
- "National Mission to Sustainable Agriculture (NMSA) is scheduled to be launched during the 12th Plan with the goal of increase the productivity of agriculture, make it more durable and climate-resistant and sustainable; to protect natural resources; and to implement extensive soil health management techniques that optimize the utilization of water resources, etc.
- "Soil Health Management (SHM) is among the most crucial interventions in NMSA. SHM is aimed at promoting Integrated Nutrient Management (INM) by judiciously using chemical fertilisers, including micro and secondary nutrients combination with organic manures and bio-fertilisers to improve soil health and its productivity.
- It also aims to increase the efficiency of fertiliser and soil testing facilities that provide recommendations based on soil tests to farmers on improving soil fertility; assuring that fertilisers meet the requirements for quality control bio-fertilisers, organic fertilisers and bio-fertiliser under the Fertiliser Control Order 1985; enhancing the skill and understanding of soil testing lab staff as well as extension personnel and

farmers through demonstrations and training and promotion of organic farming practices.

- **Current steps to preserve soil:** The most urgent requirement is to develop new policies and practices in agro-ecological agriculture which create sustainable and healthy agricultural systems for food production.
- Sikkim is a small northeast Indian state, has been successful in eliminating chemical fertilisers and pesticides slowly but with determination and has shifted the entire state to organic farming.
- Organic farming and natural farming is not only cost effective but also bring about improvements in soil health as well as the farming ecosystem.
- The Indian government launched an soil health card program.
- In the program as up to date the cards for soil health were issued to approximately 23 million farmers.
- This program has not only contributed to improving the soil's health and its inhabitants, but also has benefited many farmers by increasing their production of their crops and their earnings.
- There is a reduction on the usage of chemicals fertilizers between 8-10 percent, as a result of the use of fertilisers and micro-nutrients in accordance with the recommendations of the soil health cards for soil health.
- This means that India is well on its way to restore 26 million hectares degraded of land in the next decade.
- It is imperative to take an international effort that involves both civil society and governments to stop this worrying trend.
- Campaigns such as "save soil campaign" by Sadhguru is a move towards this goal.

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### **Topic 39. GOVERNOR'S POWER TO SUMMON, PROROGUE OR DISSOLVE AN ASSEMBLY**

*Important for Subject: Polity*

There are 2 clauses in the Constitution which give a governor the power to call, delegate and dissolve an assembly. According to article 174 of the Constitution, governors is able to call the House at any date and time that she or he deems appropriate.

- The Article 173 (2) (a) states that governors may be able to "time to time" prorogue the House and article 174 (2) (b) permits the governor to dissolve the Legislative Assembly.
- Article 163 states that the governor can perform his or her duties with the help and advice of the ministers' council.
- It also states that he or she does not require their guidance in the event that the Constitution obliges the governor to perform any task at the discretion of the governor.
- An Madras High Court judgment of 1973 clarified the issue of the power of discretion over prorogation by transposing Article 163 to Article 174, stating that governors were dependent on the assistance and guidance from the minister's council.
- Supreme Court on governor's discretionary powers in 2016 SC clarified that governors have the power to "governor can summon, prorogue and dissolve the House, only on the aid and advice of the council of ministers".
- The court further clarified that should the governor have reason to think that the chief minister or his or her council of ministers had lost the trust of the House the floor test may be ordered.

#### **Topic 40. POWER OF SPEAKER**

*Important for Subject: Polity*

In granting interim relief to MLAs who rebelled from the Shiv Sena on Monday and Tuesday, the Supreme Court made a crucial but unorthodox judicial decision that raises doubts about the power of the Speaker as outlined in the Tenth Schedule of the Constitution.

- **More information about News:** The Tenth Schedule or the anti-defection law, which was introduced in 1985, confers on an Speaker in the House the power of disqualifying legislators who "depart" from the party.
- In the case of KihotoHollohan in the case of Kihoto Hollohan v. Zachillhu in 1992 the Supreme Court upheld the power that the Speaker has and declared that it is only the official decision by the Speaker will be subject to the judicial review.
- Courts have not interfered in the process.



- In the important Nabam Rebia v Bemang Felix case, the Supreme Court held that it is "constitutionally impermissible" for a speaker to initiate the disqualification process when a motion for no-confidence against the speaker is in process.
- Speaker's Election: The Speaker is selected from those who are Lok Sabha members by a simple majority of those present and voting House.
- Speaker's term of office Speaker takes office from the date of their election until prior to the first session of the following Lok Sabha.
- The functions of the Speaker are the sole interpreter of rules in the Constitution of India, the Rules of Procedure and Conduct of Business of Lok Sabha and the parliamentary precedents within the House.
- He or she is the speaker of an open session of the two houses of Parliament.
- He/She may call an adjournment of the House or stop the meeting when there is no the quorum.
- He/she decides if a particular bill is a money-related bill or not. His/her decision regarding this issue is final.
- Committees such as that of Business Advisory Committee, the General Purposes Committee and the Rules Committee work directly under her chairmanship.
- **Removal of Speaker:** As per Section 179, Article 173 of the Constitution the Speaker is able to be removed through an act of the Assembly that is passed by the majority of "all the then members of the Assembly".
- The procedure begins with a an intimation of at most 14 days.

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### **Topic 41. HOW WILL THE ROE ROLLBACK IMPACT WOMEN?**

*Important for subject: Polity*

The U.S. Supreme Court on Friday declared unconstitutional the right to abort, upholding the historic 1973 Roe v. Wade decision which had codified a woman's right to choose her body.

**What do you think the implications are for ruling of the U.S. top court overturning an 1973 ruling on the right of abortion?**

- Abortion restrictions severely affect those from marginalized groups that have a difficult time obtaining medical care, including abortion.

- It is reported that the UN sexual and reproductive health organization (UNFPA) as well as the World Health Organization (WHO) reported that 45% of abortions in the world are not safe, which makes abortion the leading cause of maternal mortality.
- UNFPA stated that more dangerous abortions are likely to occur across the world as access to abortions is made more limited.
- Women who want to have abortions will need to go to states where it is allowed, making the procedure costly and which is not accessible to all.
- 8/11 Indian abortion laws In the 60s in after a large number of abortions performed by instigation during the 1960s, the Union government demanded the establishment of the Shantilal Shah Committee to deliberate on the legalization of abortion in India.
- In order to decrease the mortality of mothers due to unsafe abortions and to reduce the risk of a miscarriage, it was decided to pass the Medical Termination of Pregnancy (MTP) Act was brought into the law in 1971.
- **Medical Termination of Pregnancy (MTP) Act, 1971:** The concept of terminating an unborn baby is not the result of decision, but is only a result of circumstantial circumstances.
- **The statute (section 3. of MTP Act 1971), doctors can carry out an abortion in one of the following scenarios:** When the pregnancy is harmful to the health of the patient or impact the patient's mental or physical health.
- The doctor must examine the specific conditions of the patient in order to determine whether the pregnancy is harmful to her mental wellbeing, on a case-by-case basis.
- If there is a high likelihood that the child will suffer from mental or physical issues that would make him or her severely handicapped.
- If the pregnancy happened as the result of a lack to use contraception (but this only applies only to women who are married).
- If pregnancy occurs as a result of a sexual assault or rape.
- The latest modification in the MTP Act was made in 2021.
- Medical Termination of Pregnancy (Amendment) Act, 2021.
- This Act increased the maximum amount of gestational time in which a woman may have a medical abortion, to 24 weeks, up from the 20 weeks in the legislation of 1971. Act. It can be applied in certain situations.
- From 20 weeks to 24-weeks, an approval of two medical professionals who are registered is mandatory.

- In the prior Act the advice of a registered doctor was required to obtain medical abortions up to 12 weeks gestation.
- However, two doctors had to approve abortions up at 20 weeks.
- In the 2021 Act, medical termination of pregnancy is allowed provided it is backed by a medical opinion and required for at least one of the following reasons:
  1. When the continued pregnancy could pose a threat to the health of the woman who is pregnant
  2. If it could cause serious harm to her mental or physical health.
  3. If there is an extremely high risk that should the baby be born with severe mental or physical abnormalities.
- The pregnancy may be terminated until 24 weeks gestational age following the advice of two licensed medical professionals in these circumstances
- If the woman is the victim of sexual assault, incest or rape.
- In the event that she's a minor
- In the event that her marital situation changed during her pregnancy (i.e. either divorce or widowhood)
- If she suffers from severe physical limitations or is mentally sick, she should seek medical attention.
- In the event of foetal malformations that are incompatible with life , or if the child was born, it will be severely handicapped
- In humanitarian situations or in disaster or in emergency situations, as stated by the government.
- In addition being in a situation where the pregnancy needs been terminated over the gestational period of 24 weeks the termination is only possible to do so due to foetal anomalies if a four-member Medical Board, as set in every State in the Act allows the decision to terminate the pregnancy.
- Unmarried women are also able to obtain abortions within the mentioned conditions since it doesn't require spouse consent if the woman is under the age of 18 however, the permission of a guardian or guardian is required.
- **Legal Interventions in the case of abortions:** In the 2017 the Right to Privacy ruling in Justice K.S. Puttaswamy in the case of.
- Union of India and other cases in which The Supreme Court had held that the decision made by pregnant women as to whether to keep the pregnancy , or not to continue it is

a part of a person's right to privacy and therefore an individual's right to liberty and life in accordance with Article 21 in the Constitution In February of this year it was decided that this year, the Calcutta High Court allowed a 37-year-old woman who was 34 weeks pregnant in the process of having an abortion on medical grounds because the foetus was diagnosed as having an incurable spinal issue.

- The court's decision allowed abortions with the highest gestational gestation that has been allowed in the country to date.
- UNFPA is officially called to be the United Nations Population Fund.
- It was established in the year 1969.
- It is now known as the United Nations sexual and reproductive health agency.
- It advocates for the protection of reproductive rights to all people, and encourages the access to a variety in sexual and reproductive healthcare services, including family planning that is voluntary as well as maternal health care.
- An extensive sexuality education program.

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## **Topic 42. GOVERNOR POWERS, FLOOR TEST LAW UNDER SPOTLIGHT**

### ***Important for Subject: polity***

While the Maharashtra political turmoil continues to play out as the Shiv Sena in the process of an uneasy split as well as CM Uddhav Thackeray could lose majority of the state, Governor's authority as a result of the Constitution's power to ask for a floor test is taking place in the centre of.

- In Article 174(2) (b) in the Constitution empowers Governors of the State to dissolve the Assembly with the help and guidance of the cabinet.
- However the Governor is able to make his decision if the advice is from the chief minister whose majority may have been in question.
- In accordance with Article 175(2) (2), Governors can call the House and request an examination of the floor to determine whether the government is in enough votes.
- If there is a House has been in session it's the Speaker who is able to summon a floor test.

- If there is no session, the Assembly does not meet the Governor's residuary power under Article 163 permit the Governor to call for an examination on the floor S R Bommai Case.
- The Governor plays an important role to play in times of an underlying political crisis in states.
- Prior to 1994 Governors were quick remove state government by claiming that they was not represented by an overwhelming majority in the state legislature.
- They also recommended the imposing of Governor's rule on the state.
- However, in 1994, the Supreme Court ended this practice by deciding on the SR Bommai case in 1994.
- In this case, the court decided that the proper place to decide whether the government had diminished its support was the legislature.
- Maharashtra Governor Bhagat Singh Koshyari is able to ask chief minister Uddhav Thackeray to call the Assembly and establish his majority in the House on the floor.
- In 2020, it was the Supreme Court, in Shivraj Singh Chouhan & Co. v. Speaker Madhya Pradesh Legislative Assembly & Ors and affirmed the authority for the speaker to summon an exam on the floor when there is an initial indication the ruling party has lost their majority.

### **Topic 43. ATTORNEY GENERAL (AG) TENURE EXTENDED**

*Important for Subject: Polity*



The Union government has extended the term of the senior advocate KK Venugopal to be the AG. (AG) for an additional three months.

- In Article 76, the Constitution of India provides for the office of Attorney General of India.
- The Attorney General is the top law enforcement officer in the nation. The appointment and the term of the Attorney General India It is an appointment made by President.
- He has to be someone who has the qualifications to be appointed a judge on the Supreme Court.
- This means that he should be an Indian citizen. India and that he has been a judge of a higher court in the last five years, or an advocate in a high court for 10 years or be an outstanding jurist.
- It is not clear what the term for an AG is not fixed by the Constitution. AG is not regulated in the constitution.
- The Constitution doesn't contain the procedure and reasons for the AG's removal.
- He is in office at the presidency's pleasure, so he can remove the president from office at any point.
- He is dismissed in the event that the Government (council of ministers) has to resign or is replaced, if they are appointed on their recommendations.
- The duties and functions of the attorney general of India to provide advice for the Government of India upon such legal issues that are assigned to by the president.
- To perform other obligations of a legal nature that are given his by President and to fulfill the duties that are conferred upon his by either the Constitution or any other law.
- **The president has given the following responsibilities to the AG:** AG to represent for the Government of India in all instances before the Supreme Court in which the Government of India is concerned.
- Assist in any case brought by the Government of India in any request given by the president Supreme Court under Article 143 of the Constitution.



**Topic 44. GOVT ADVERTISES TOP POST OF OIL REGULATOR, 2ND IN AS MANY YEARS**

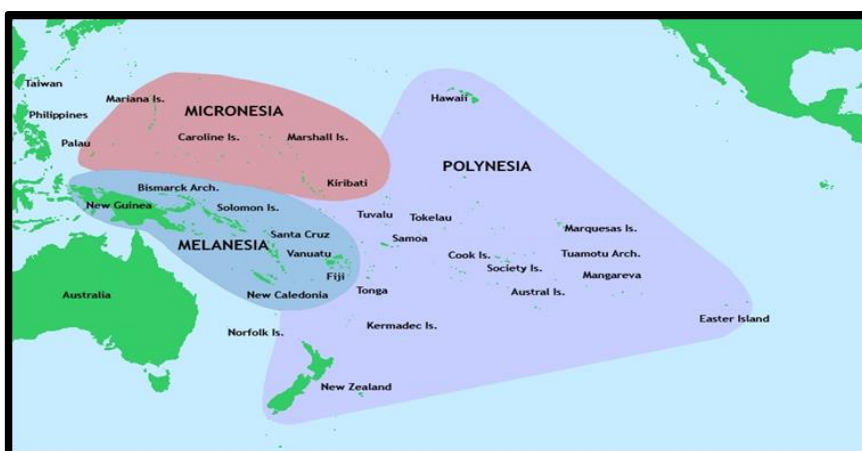
*Important for Subject: Polity*

The Centre has second time in the span of years, announced the post of chairman of the oil and gas regulator Petroleum And Natural Gas Regulatory Board (PNGRB) which was empty since December of 2020.

- The Petroleum and Natural Gas Regulatory Board (PNGRB) was established by the Petroleum and Natural Gas Regulatory Board Act in 2006 (NO. 19 OF 2006) notified via Gazette Notification dated 31st March, 2006.
- The Act provides for the creation of the Petroleum and Natural Gas Regulatory Board to safeguard the rights of both consumers and companies engaged in certain activities related to petroleum products, petroleum as well as natural gas, and to encourage competitive markets, and other matters related to or related to.
- In addition, as stipulated in the law the board has been mandated to oversee the refining process storage and distribution marketing and sales of petroleum as well as petroleum products and natural gas, excluding the production of natural gas and crude oil to ensure the continuous and uninterrupted supply of petroleum as well as petroleum products and natural gas across all regions of the nation.

**Topic 45. US-LED ‘PARTNERS IN THE BLUE PACIFIC**

*Important for Subject: International Relation*



As China continues to aggressively move to expand its Pacific area that it has a significant influence on, the US as well as its allies including Australia, New Zealand, Japan and the United Kingdom -- have unveiled a new initiative, dubbed "Partners in Blue Pacific to ensure "effective and efficient cooperation" with the small islands.

### **What exactly is Partners in the Blue Pacific (PBP) initiative?**

- The PBP is five-nation "informal mechanism" to support Pacific islands and boost relations between the diplomatic and economic worlds of the region.
- The announcement was made on the 24th of June It focuses on enhancing "prosperity, resilience, and security" within the Pacific by fostering more collaboration.
- This simply means that, through the PBP the countries as a group and individually will allocate more resources to counter China's aggressive reach.
- The members of the initiative have announced the intention to "elevate Pacific regionalism", and build stronger connections to Pacific Islands Forum. Pacific Islands Forum.
- In a statement jointly released for the occasion, the five participating nations stated that the forum is willing to work with additional partners, and that "at all times, these nations will be guided and guided by Pacific Islands.
- The areas in which PBP is seeking to improve cooperation are "climate crisis, connectivity and transportation, maritime security and protection, health, prosperity, and education".

### **What is Partners in the Blue Pacific (PBP) initiative?**

- When China entered into a security pact to the Solomon Islands in April, the agreement raised worries about the Chinese military establishing an area of operations within the south Pacific close to Guam, which is the US island state of Guam and between Australia as well as New Zealand.
- The agreement, which helped China's ambition to control key shipping routes that cross the region, shook and shook the US along with its closest allies.
- The deal also triggered urgent actions to counter China's rising Pacific ambitions in a political vacuum that is fueled by the absence of US interest.

- Beijing continued to build on its win by sending foreign minister Wang Yi undertaking a multi-nation tour to convince 10- Pacific nations to sign an "game-changing" agreement called the "Common Development Vision".
- This draft document, which was accessed through The Associated Press, spoke about China intending to cooperate together with "traditional and non-traditional security," and also to increase police cooperation with the countries.
- The diplomatic campaign included Wang Yi visit the Solomon Islands, Kiribati, Samoa, Fiji, Tonga, Vanuatu along with Papua New Guinea, and meet in virtual meetings with Cook Islands, Niue, and Niue, and the Federated States of Micronesia.

### **What are the actions taken in US and its allies to counter China? US along with its Allies in order to fight China?**

- Prior to launching the PBP this month the US along with its partners launched with the IndoPacific Economic Framework for Prosperity (IPEF) an economic development game in the region that includes 13 countries including Australia, Brunei, India, Indonesia, Japan, Malaysia, New Zealand, the Philippines, Singapore, South Korea, Thailand, Fiji and Vietnam as partners.
- In addition to the Pacific: G7 have announced a new plan the Partnership for Global Infrastructure and Investment (PGII) to which will rival the Chinese Belt and Road Initiative by promising to raise \$600 billion for development projects in middle- and low-income countries.

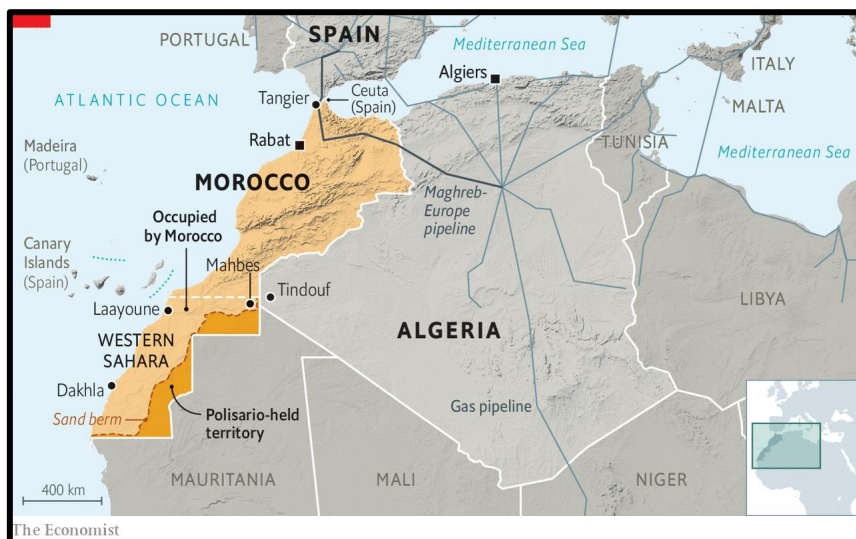
### **What is the reason why the Pacific region so important strategically?**

- In its 2019 strategic report which was released on January 1, the US Department of Defence called the Indo-Pacific the "single most consequential region for America's future".
- **It stated:** "Spanning a vast stretch of the globe, from West coast of United States to the western shores of India.
- The region is the home of the world's most popular state (China) as well as the largest democratic state (India) and the most populous Muslim majority nation (Indonesia) as well as more than half of the world's inhabitants.
- Of the 10 biggest standing armies around the globe seven of them are in the Indo-Pacific and six countries of the region are home to nuclear weapons.

- Nine of the 10 largest seaports within the Indo-Pacific region.
- 60% of the world's shipping routes pass through Asia and around 1/3 of all global shipping going across this region in South China Sea alone.
- "The US has long held an equilibrium on the power scale in Asia, thanks to its hub-and-spoke model where America acts as the hub, and its allies are spokes, whose protection is provided by US militarism.

## **Topic 46. WESTERN SAHARA DISPUTE**

*Important for Subject: International relations*



Algeria announced that it would be immediately suspending its treaty of 20 years which aims to promote "friendship, good neighbourliness, and co-operation" with Spain. The break in ties was triggered when Spain changed its position in its position on the Western Sahara dispute.

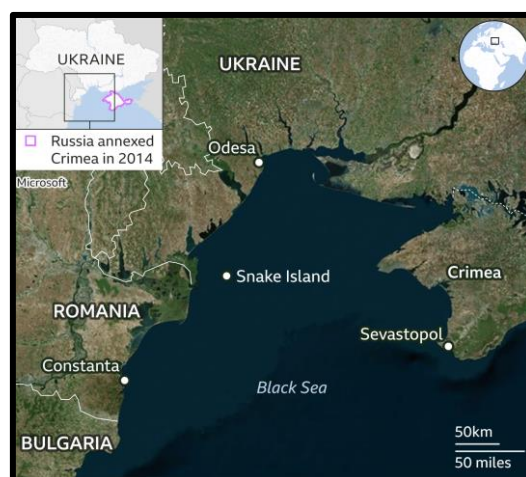
### **What is the Western Sahara dispute?**

- The conflict started when the an invasion of the area through Spain around 1884.
- After Spain announced its decision to leave Western Sahara in 1975, the region was thrown into the middle of a war among Mauritania, Morocco and the Polisario Front - with all three trying to dominate the region.
- In 1975, the Polisario Front declared the establishment of the Sahrawi Arab Democratic Republic (SADR) in Western Sahara on the very day that Spain had to leave.

- But the SADR was not granted Western recognition, despite it later to join the African Union.
- The issue came to the International Court of Justice in 1975, and the court concluded that there was no way for Morocco or Mauritania had the right to assert sovereignty over Western Sahara.
- The ICJ called for the decolonization the region.
- In spite of the ICJ's decision the Moroccan Sultan started" the "Green March" towards Western Sahara leading to the increase in the number of Moroccans from the region.
- In the meantime, the Polisario Front kept fighting both Morocco and Mauritania. The Front agreed to a ceasefire together with Mauritania during 1979.
- The war with Morocco continued until the end of the year in 1991 when Morocco together with the Polisario Front agreed to a Peace Agreement with the UN.
- Following the agreement in the year 1991 Agreement, Morocco controls about 80 percent of the Western Sahara, with the Polisario.
- Front-led SADR operating mostly from the eastern reaches of the region as well as from refugees' camps located in Algeria.
- The Front is still pushing towards full independence, receiving support from Algeria.
- Algeria is a staunch partner of the Polisario Front, after it acknowledged it as the Sahrawi Arab Democratic Republic in 1976.

### **Topic 47. THE IMPORTANCE OF SNAKE ISLAND, SPECK OF LAND IN THE BLACK SEA, WHERE UKRAINE HAS BOMBED RUSSIA**

*Important for Subject: International relations*



Ukraine has claimed that it has created "significant losses" to the Russian military during airstrikes on Zmiinyi Island, also known as Snake Island, in the Black Sea.

- While the conflict between Ukraine and Russia is raging and the spotlight is now on Kaliningrad the westernmost region of Russia.
  - Kaliningrad is in the middle of a dispute after Lithuania has decided to prohibit items that fall under EU sanctions from entering its territory in order to get to Kaliningrad
- Important Locations and Places: Snake Island: Zmiinyi Island which is often referred to by the name of Snake or Serpent Island it is small chunk of rock that is less than 700 meters from end to end.
- It is described as "X-shaped it lies 35km away from the coastline within the Black Sea, to the east of the mouth of Danube and to the southwest of the port town of Odessa.
  - **It's part of Ukraine It is located in the Black Sea:** It was linked to Ukraine to the northwest and north, Russia and Georgia to the east, Turkey to the south in addition to Bulgaria as well as Romania towards the west, and connects with the Sea of Marmara through the Bosphorus and eventually to the Aegean via the Dardanelles

#### **Why the Black Sea is significant for Russia?**

- This Black Sea is both a step towards the Mediterranean and also an important barrier between NATO and Russia.
- Dominance over The Black Sea region is a crucial geostrategic issue for Moscow as it seeks to establish Russian power across the Mediterranean and to protect the gateway to economic markets in the southern part of Europe Kaliningrad is the westernmost federal state of Russia Kaliningrad Oblast, which is Russia's westernmost federal entity Kaliningrad Oblast has a total area of 15,000 sq km.
- It is home to the presence of Russia's Iskander missiles as well as Iskander missiles and the Russian Baltic Fleet, Kaliningrad is often referred to as "the Kremlin's "unsinkable aircraft carrier"



**Topic 48. INDIA JOINS G7, 4 OTHERS TO PROTECT FREE SPEECH, ‘ONLINE AND OFFLINE’**

*Important for subject: International relation*



India together with the G7 and four countries invited Monday, signed the '2022 Resilient Democracies Declaration' in which they pledged to "guarding the independence, freedom and variety that civil society players enjoy

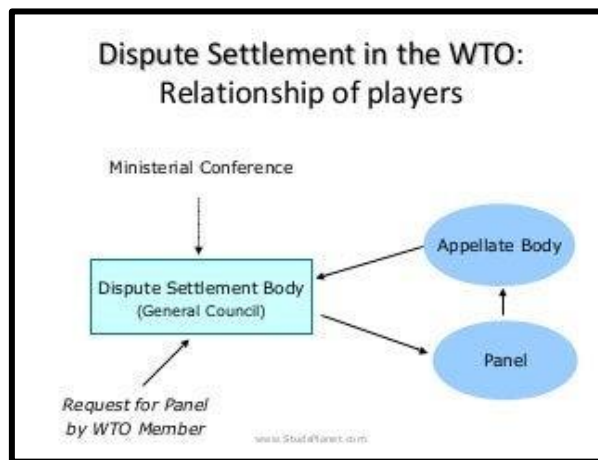
**What they said in the statements?**

- Democracies facilitate "open public debate, independent and pluralistic media" and the "free flow of information on and offline, fostering credibility in transparency, transparency, and accountability for citizens as well as elected representatives alike.
- Protecting the freedom of expression and opinions offline and online as well as ensuring a democratic and open media environment through our collaboration in conjunction with international initiatives that ensure an open and free and interoperable global secure, reliable internet.
- Enhancing the cyber resilience of the digital infrastructure, for example through enhancing and sharing knowledge of cyber-related threats and expanding cyber-response cooperation.
- Combating hybrid threats, specifically manipulating information and interfering and disinformation.
- Collaboration to combat manipulation of information as well as to promote the accuracy of information and advocate for our common democratic principles throughout the world.

- Facilitating access to affordable sources of trustworthy and reliable knowledge and facts, both on and offline, by a multi-stakeholder model as well as by enhancing digital literacy and digital skills.
- Making it easier to be transparent regarding the activities of online platforms in order to fight violent extreme and inciting content that is available online.
- Protecting the independence, freedom and the diversity that civil society players enjoy calling out threats to public space and ensuring freedom of expression and peaceful gathering.
- Resilience against foreign interference and transnational repression, which seek to destroy trust and confidence in the government as well as the media and society.
- Restrict the civic space of citizens and shut down critical voices.
- Promoting programs for the protection of human rights defenders as well as anyone who is exposing corruption.
- G4 nations The G4 nations consisting of Brazil, Germany, India along with Japan are four countries that have a common interest in securing permanently appointed seats in the United Nations Security Council.
- Established in 2004, the G4 nations are the backbone of these demands is that each of these countries has been elected as non-permanent members of the Security Council since the time of the UN's inception.
- Their influence on the political and economic front has increased significantly over the past decade, and they have reached an amount comparable to permanent member (P5)

## Topic 49. WTO APPELLATE BODY

*Important for Subject: International relations*



There was no discussion on how to restart the World Trade Organisation's (WTO) Appellate Body, which was inactive since the 12th ministerial meeting. WTO Appellate Body WTO was created to serve as a forum for trade negotiations and the creation of rules, and to also monitor and manage multilateral trade.

- But, one of its primary goals was to settle disputes among its members, acting as a tribunal for international trade.
- Any appeals made against the rulings of DSB are referred before the WTO Appellate Body.
- It is the Appellate Body, established in the year 1995, functions as a permanent body of seven members, with an enumeration period of four years which hears appeals of decisions made in disputes involving trade filed in by WTO members.
- The dispute arises when a member state believes that a member's government violates a promise or a trade deal signed by the WTO.
- Trade remedies in accordance with WTO guidelines stipulate that members are not allowed to raising their tariffs over the limit of a certain amount.
- However, the WTO provides a way that allows governments to violate these rules to implement trade remedies, including anti-dumping duties.
- These are when the market is distorted due to the nation that produces the goods in exporting its products at a lower price than what the market would pay.

- The countries are permitted to take this action to protect its imports at a low cost and other offsetting duties in order to safeguard itself from subsidies to imports in order to protect tariffs that counter the rises in imports.
- **Disput Resolution:** Current Mechanisms in the United States stopped the process of re-appointing judges after their term expired in 2017.
- In December of 2019 the number of judges at the court was less than three -- which is the minimum requirement.
- This is particularly significant due to the Russia-Ukraine conflict that forced many nations to stop exports, which brought International trade to an impasse.
- In the meantime, until a fully-fledged solution is put into being, a few nations have created a temporary arrangement.
- The interim arrangement consists of countries as well as members using a common approach. EU is one example.
- It initiated measures to create temporary appeal arbitration agreements.
- Following an end to the Appellate Body, EU and 18 members set up a 'multi-party appeal arbitrar arrangement' which gives WTO members access to two-step dispute settlement procedure to reach a consensus.
- This arrangement permits parties to make reference to Article 25 of the Dispute Settlement Understanding (DSU) of the WTO's arbitration rules, and to follow the concepts of substantiation and procedure for the appellate bodies operation.

## Topic 50. PM MODI'S GIFT TO G7 LEADERS

*Important for Subject: History*



Prime Minister Narendra Modi, who was visiting Germany to attend the G7 Summit, presented its leaders with various gifts that showcased India's diverse art and crafts and, in particular, those that relate to Uttar Pradesh's One Product Scheme.

- Metal Marodi carving matka to German Chancellor.
- This hand-engraved, nickel-coated brass vessel is an absolute masterpiece of District Moradabad.
- Gulabi Meenakari brooch, and cufflinks are engraved to the US President.
- Gulabi Meenakari is an art form that is GI-tagged from Varanasi which is located in Uttar Pradesh.
- Hand-painted and platinum-painted tea set was made from Bulandshahr and UP, which was used by the UK PM.
- The French President received two bottles of ltr inside Zardozi box made in Lucknow.
- The zari Zardozi box is hand-embroidered on satin tissue and khadi silk in the colours from the colors of French National Flag.
- The box contained Attar Mitti Jasmine oil Attar Shamama Attar Gulab, Exotic Musk as well as Garam Masala.
- It was hand knotted Kashmiri silk carpets for the Canadian PM. Black Pottery pieces to Japan's PM.
- This Black Pottery of Nizamabad in Uttar Pradesh uses a special technique for bringing out black hues.
- When the pottery is in the oven, it is made sure that there isn't any room for oxygen to get into the oven, and the heat is maintained at a high level.
- Tabletops with marble inlay is a tribute to the PM of Italy.
- Pietra dura or Marble Inlay originates from the Opus sectile, a type of pietra dura which was popularized in the medieval and ancient Roman world, where materials were cut and then inlaid on floors and walls to create an image or pattern.
- The marble table top that has Inlay work was created within Agra which is the city of Taj Mahal fame.
- Dokra Art with Ramayana Theme to South President of Africa.
- Dokra Art is nonferrous metal casting art that is created using the casting method of lost wax.

- It is a Nandi themed Dokra Art to Argentina's President.
- Baskets of Moonj and Cotton duries to the President of Senegal.
- The lacquerware Ram Darbar to Indonesia's President.
- The art form known as GI-tagged lacquerware is rooted in the city of temples of Varanasi within Uttar Pradesh.
- Meenakari Art The art of coloring and painting the surfaces of ceramic and metal tiles using enamel, which originated in Safavid Iran.
- It is regarded as an art form, and is commercially made by Iran, Afghanistan, Pakistan and India (the term Kundan is used more frequently for India).
- Minakari art is usually intricate designs (mainly with geometric shapes and patterns) and is used as a decoration feature on serving dishes containers, vases frames, display accessories, frames and jewellery.
- Zardozi This can be described as an Iranian and Indian subcontinent embroidery Zardozi is a kind of elaborate and heavy metallic embroidery applied to silk, satin, or velvet base.
- Designs are typically created using silver and gold threads and can include beads, pearls, and precious stones.
- It can be used as a decoration for a variety of uses, such as clothes or household textiles as well as animal trappings.
- It was traditionally used to embellish castle walls, scabbards wall hangings, and other accessories of royal horses and elephants.
- The initial embroidery was created using pure silver wires as well as real gold leaves.
- Today, however, crafters employ a mix of copper wire, the silver polish, or golden polish as well as silk thread.



## **Topic 51. NADAPRABHU KEMPEGOWDA**

*Important for Subject: History*



Bronze statues of Nadaprabhu Kempegowda, believed as the creator of Bengaluru and will be revealed soon on the location that are the Kempegowda International Airport (KIA) located on the outskirts of Bengaluru. Additionally, Karnataka Chief Minister Basavaraj Bommai has declared that a Kempegowda statue will be built in the Vidhana Soudha facility within the next year.

### **Who was Nadaprabhu Kempegowda?**

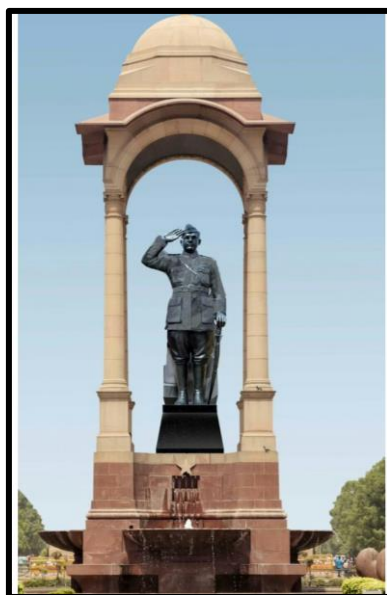
- Nadaprabhu Kempegowda the chieftain of the 16th century from the Vijayanagara Empire, is acknowledged as the savior of Bengaluru.
- According to legend, he came up with the idea of the city's creation while going on a hunt with the minister and later he carved out the city's area by building towers at four areas of the proposed city.
- Kempegowda is also believed for having created around 1,000 lakes within the city in order to satisfy the needs of agriculture and drinking.
- He was a member of the predominant agricultural Vokkaliga community in southern Karnataka.
- The name of the community is everywhere in the city, including for instance, the Kempegowda International Airport, the Kempegowda Bus Stand, and even the main

metro station that is located in the city is known as Nadaprabhu Kempegowda the metro station.

- An important road in the city's old town is known as "the K G Road or the Kempegowda Road.
- Kempegowda is a recognizable persona in Karnataka's second influential Vokkaliga community, following Lingayats.
- The historic Mysore region of south Karnataka is comprised of regions which were part of the former kingdom of Mysore -- Mysuru, Mandya, Chamarajanagar, Tumkur, Hassan, Chikmagalur, Kolar, Bengaluru and is not comprised of coastal areas or Kodagu.
- The airport statues of Kempegowda the 108-foot bronze statue is being constructed within the 23-acre park that is located in the premises of the airport.
- It features a 4,000-pound sword, which was brought to the Bengaluru airport from Delhi in the month of October.
- The sword arrived via a specially designed truck that came from Delhi. Its statue in Kempegowda is currently in the final stages of being completed and is the largest statue in Kempegowda.

**Topic 52. HOLOGRAM REMOVED, GRAND CANOPY AT INDIA GATE READIES FOR BOSE STATUE SUBHAS CHANDRA BOSE**

*Important for subject: History*



Subhas Chandra Bose, born January 23, 1897 at Cuttack, Orissa Division, Bengal Province, to Prabhavati Dutt Bose and Janakinath Bose. He was heavily in the direction of Vivekananda's teachings, and considered him the spiritual Guru of his. He was his political mentor Chittaranjan Das. In 1921, Bose took over the editorship of the newspaper 'Forward', founded by ChittaranjanDas'sSwaraj Party.

- The year 1923 was the time Bose received the honor of being elected as the president of the All India Youth Congress and as Secretary of the Bengal State Congress.
- He was also sentenced to jail in Mandalay in 1925 for his involvement in militant movements.
- He was also diagnosed with Tuberculosis.
- Bose was elected as the President elected by the Indian National Congress in 1938 (Haripur) and advocated for non-qualified Swaraj (self-governance) as well as the use of force against British who then fought Mahatma Gandhi's ideas.
- Bose was elected at the end of 1939 (Tripuri) however he soon quit the presidency and founded.
- The All India Forward Bloc, an ally of the Congress that aimed to consolidate the left-wing political party.
- He passed away on the 18th of August 1945, after the crash of a plane in Japan-ruled Formosa (now Taiwan).
- The contribution to the Freedom Struggle Association with C.R Das: He was a part of with C.R. Das his political endeavor and was jailed alongside C.R. Das.
- When C.R. Das was elected as the Mayor for the Calcutta Cooperation, he nominated Bose as the chief executive.
- He was arrested for political actions in 1924.
- **Trade unions:** He organized youth and promoted trade unions. In 1930 the year he was elected as the Mayor of Calcutta in the same year that he was elected president of the AITUC.
- **Congress affiliation:** He voted for an unqualified Swaraj (independence) and was against the Motilal Nehru Report which spoke about dominion status for India.
- He was active during the Salt Satyagraha of 1930 and was adamantly opposed to the suspension of the Civil Disobedience Movement and signing of the Gandhi-Irwin Peace Pact in 1931.

- Through the 30s, Gandhi became closely linked to left politics in Congress alongside Jawaharlal Nehru as well as M.N. Roy.
- Due to the efforts of the left-wing group and the left-wing group, Congress passed broad-ranging extreme resolutions Karachi in 1931, which set out the principal Congress purpose to be socialization of production techniques, while also protecting basic rights.
- **Congress presidency:** Bose won the congress president's elections in Haripura the year 1938.
- Next year at Tripuri, he again won the presidential elections against Gandhi's candidate Pattabhi Sitarammayya.
- Because of his ideological disagreements between him and Gandhi, Bose left congress and founded a new political party, called the Forward Bloc'.
- The goal was to strengthen the left-wing political party and to build a major supporter base in his home state of Bengal.
- **Civil disobedience:** After World War II began, Bose was once again imprisoned for civil disobedience.
- He was placed in house detention.
- Bose manages to escape Berlin through Peshawar as well as Afghanistan.
- He made his way to Japan and then on to Burma and reorganized an army called the Indian National Army to fight the British and free India with the assistance of Japan.
- The famous slogans were "Jai Hind" and "Dilli Chalo'. He was killed from a crash of a plane prior to realising his dream.
- Azad Hind Bose was the founder of the liberated India centre in Berlin and established the Indian Legion from the Indian captives of war, who had served for British forces British and British forces in North Africa prior to their being captured in the hands of Axis forces.
- While in Europe, Bose sought help from Hitler and Mussolini to secure the liberation of India.
- In Germany the country, he was assigned in the special bureau of India that was in charge of the broadcasting of Azad Hind Radio, the German funded Azad Hind Radio.
- On the radio, Bose on 6th July 1944 was addressing Mahatma Gandhi, referring to him as the "Father Nation'.

- **Indian National Army:** He reached Japan-controlled Singapore after escaping Germany during July of 1943.
- He made his famous "Delhi Chalo" and announced the creation of the Azad Hind Government as well as The Indian National Army on 21st October 1943.
- The INA was founded under the leadership of Mohan Singh and Japanese Major Iwaichi Fujiwara.
- The INA was made up of Indian prisoner of war from the British-Indian Army that was captured by Japan during the Malayan (present-day Malaysia) campaign and also at Singapore.
- The INA comprised both Indian prisoners of conflict from Singapore as well as Indian civilians from South-East Asia.
- The strength of the group was increased to the number of 50,000.
- The INA engaged in battle with the allied forces during 1944 inside the boundaries of India in Imphal as well as in Burma.
- After the demise of Rangoon, Azad Hind Government was no longer a viable political institution.
- In November 1945, a British decision to place the INA men in trial led to massive protests across the nation.
- The impact on the I.N.A.
- Experience led to the wave discontent in the British Indian army during the 1945-46 time frame, culminating in the massive Bombay naval conflict in February 1946.
- It was also one of the primary factors for that British decision to take the swift withdrawal.
- **The composition of the I.N.A:** The I.N.A. was predominantly non-communal with Muslims being prominent in its ranks and officers, and also the idea of a women's unit named following the name of the Rani Jhansi.

## Topic 53. GOA'S SAO JOAO FESTIVAL

*Important for Subject: History*



In every monsoon, Catholics from Goa will observe Sao Joao, the feast of St. John the Baptist on Friday.

### **What is Sao Joao and where is it celebrated in Goa?**

- It is in Goa, Catholics celebrate all the celebrations that are part of the Roman Catholic Church, which includes the feast of Saint John The Baptist on the 24th of June (John the Baptist because he was baptized by Jesus Christ on the river Jordan).
- In the past, there were spirited Sao Joao celebrations in the towns that are located in Cortalim within South Goa and Harmal, Baga, Siolim and Terekhol in North Goa.
- In the past, however there have been private parties, pool parties, and Sao Joao celebrations in Goa are described as a "complete package of merriment and joy" for visitors.

### **What does jumping into water bodies symbolise?**

- **The 2004 version of the book Feasts, Festivals and Observances of Goa the author and scholar Maria de Lourdes Bravo da Costa Rodrigues wrote:** "The youngsters in Goa celebrate this occasion with revelry and perform daredevil feats, by jumping into over flowing wells or rivulets.
- The boys are found merrily jumping into the water to commemorate the leap of joy, which St John is said to have taken in the womb of his mother St Elizabeth when Virgin Mary visited her."



- There are also revelers dressed in the Kopel crown, which is made of fruit, flowers and leaves, strutting around villages, and sometimes shifting from one spot to the next as they chant, "Sao Joao! Viva Sao Joao".
- Villagers gather at the well to cheer on the people who throw themselves in the water.
- The full-throated renditions of Konkani songs specially written for the occasion are played with traditional instruments such as the gumott or cansaim (cymbal).
- Other events are part of the Sao Joao festivities Among the most notable celebrations is Sao Joao boat parade. Sao Joao boat parade in Siolim which usually has visitors who number in the hundreds.

### What is the importance assigned to new sons-in-law?

- The Goa region is renowned for its Sao Joao. Goa, Sao Joao is an opportunity for families and the locals to meet the newly married husbands more.
- In the past, the son-in-law was crowned with a headdress of festive leaves and fruits, walked throughout the village.
- He would then dive into the well with the other partygoers.
- **Shigmo Festival:** Shigmo celebrates a "rich paddy harvest that is golden and rich in the tribes of Goa.
- Communities that are agricultural, such as Gawdas, Kunbis, Gawdas and Velips celebrations of the festival which signifies the beginning of spring.
- **Two variations of the festival**
- **DhaktoShigmo:** It is appreciated by the population of the countryside farmers, the rural population and the working class.
- **VhadloShigmo** It has more significance which is celebrated by all.

**Topic 54. TRIBAL CONGRESS MLAS FROM STATE ADMIT IT IS NOT EASY TO IGNORE DROUPADI MURMU'S CANDIDATURE.**

*Important for subject: Governance*



The Panchayat (Extension of Scheduled Areas) Act, 1996 or PESA was passed through the Centre to guarantee self-government through Gram Sabhas (village assembly) for residents of designated areas.

- The act expands the powers in Part IX to the Scheduled Areas of the nation. PESA granted powers even lower to Gram Sabha level.
- It legalizes the rights tribes, who are residents of the designated areas to exercise their own authority through their own system of self-government and recognizes their traditional rights to natural resources.
- To achieve this goal, PESA empowers gram sabhas to play an important part in the approval of development plans and overseeing every social sector.
- This includes the procedures and staff who implement the policies, controlling small (non-timber) forests water bodies, minor water bodies, minor minerals, governing local markets, stopping the eviction of land and controlling intoxicants, and other substances.
- State governments were required by PESA to modify the respective Panchayat Raj Acts without making any laws contrary to the directives of PESA.
- Six states have formulated the PESA rules and Chhattisgarh could be the seventh state in the event that the PESA rules are adopted.

**What are the reasons why rules in PESA significant? What are the topics that will be addressed?**

- PESA rules allow the residents of areas that are scheduled to increase the strength of their village-level bodies by shifting powers from the state to the gram sabha an organization comprised of all registered voters in the village.
- The powers conferred by Gram Sabhas include the maintenance of traditional and cultural identities as well as control over schemes that affect the tribals, as well as the control of natural resources in the vicinity of the village.
- This PESA Act thus enables gram abhas to keep a safety cover over their rights and the surrounding area against conflict from within or outside.
- Without the proper regulations the implementation of this law is not feasible as it is a means of dispersing power away from institutionalized structures back to village inhabitants.
- Once they are established, the laws will grant Gram sabhas the ability to make decisions not just regarding their customs and traditional administered resources, but over the mineral resources being extracted from their regions.
- The rules stipulate that the local gram sabha would be updated by the agencies that work within their village.
- Additionally, the gram sabha will have the power to decide whether or not to end the work within the village boundaries.
- The rules also grant authority for the Gram Sabhas in the management of resources that concern jal, jangal, and zameen (water forests, land and water).
- The three primary needs of tribals, minor forest products; mining and mineral resources markets; as well as human resources.
- The gram sabha has the authority to oversee and prevent the manufacture transportation, sale, and consumption of alcohol within their village boundaries.
- They also have a responsibility to keep peace and end disputes that arise within the village, while preserving traditional tribal customs and practices and promoting customs such as Ghotul.
- It is further stipulated for Gram Sabha or Panchayats at the appropriate level Gram Sabha or Panchayats at an appropriate level will be able to exercise power to: be consulted in matters of the acquisition of land and resettlement.
- Permit prospecting licences to mine leases for minor minerals as well as concessions to such actions.
- Management and planning of water bodies that are minor in size.

- The authority to enforce prohibition, or to limit or regulate the consumption and sale of intoxicants.
- The property of minor forests yields.
- The power to stop the alienation of land, and the right to reinstate any land that was illegally taken of a tribe scheduled.
- The authority to control market events in villages.
- The ability to control the lending of money to tribes that belong to a scheduled tribe.
- In addition to granting such broad-ranging authority to Gram Sabhas, or Panchayats, PESA has further assigned a greater obligation to States to give Panchayats

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### **Topic 55. PM LAUNCHES NIRYAT INFORMATION PORTAL TO SUPPORT IMPORTERS AND EXPORTERS**

*Important for Subject: Governance*

- Schemes The National Import and Export Yearly Analysis of Trade (NIRYAT) portal that allows importers as well as ex-ports will be able to access all of the necessary information about trade in foreign markets will give current information to the those involved.
- The portal will provide details about over 30 commodities groups which are exported into more than 200 different countries.
- Additionally, information on district-wise exports will be made accessible. In 2021-22, India's exports crossed \$418 billion, compared to the goal 400 billion.
- The rise in cotton exports and handlooms of 55 per cent.

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### **Topic 56. NEXON EV FIRE INCIDENT: TATA MOTORS SAYS DETAILED INVESTIGATION UNDERWAY**

*Important for Subject: Governance*

National organisation The Centre for Fire Explosive and Environment Safety (CFEES), Indian Institute of science and Naval Science & Technological Laboratory (NSTL), Visakhapatnam were asked to investigate the reasons behind the incident, and suggest steps to correct the situation.

- CFEES, the Centre for Fire, Explosive and Environment Safety (CFEES) is an Indian defense laboratory that is part of the Defence Research and development Organisation (DRDO).
- It is located at Timarpur, Delhi, its principal function is to develop of products and technologies in the field of explosives, fire and environment safety.
- CFEES is part of the Armaments Directorate of DRDO.



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*Success is born of action...*