

APRIL CURRENT AFFAIRS

MOHINIYATTAM

Why in News?

The Kerala Kalamandalam, a prestigious cultural institution, has announced a significant **policy change allowing male dancers to learn Mohiniyattam, a classical dance form previously reserved exclusively for women.**

About Mohiniyattam:

- Mohiniyattam is **an Indian classical dance form originating from the state of Kerala.**
- The **dance gets its name from Mohini – the female enchantress avatar of the Hindu deity Vishnu, who helps the devas prevail over the asuras using her feminine charm.**
- **Mohiniyattam's roots, like all classical Indian dances, are in the Natya Shastra – the ancient Hindu Sanskrit text on performance arts.**
- However, **it follows the Lasya style described in Natya Shastra, that is a dance which is delicate, eros-filled and feminine.**
- It is **traditionally a solo dance performed by women after extensive training.**
- **Footwork is gentle and thumping of footsteps is absent.**
- The repertoire of Mohiniyattam includes **music in the Carnatic style, singing and acting a play through the dance, where the recitation may be either by a separate vocalist or the dancer themselves.**
- The **song is typically in Malayalam-Sanskrit hybrid called Manipravalam.**
- Costumes – **Plain white or Ivory cream traditional sari embroidered with bright gold-laced brocade.**



- Instruments used : **Mridangam, Madhalam, Idakka, flute, Veena and Kuzhitalam.**
- The **dance form was revived by Malayali Poet VN Menon and Kalyani Amma.**
- Other important personalities include Mukundraja, Appiradeth Krishna Panicker, Sunanda Nair among others.

VAIKOM SATYAGRAHA

Why in News?

The year 2024 marked the **100th anniversary of Vaikom Satyagraha.**

About Vaikom Satyagraha:-

- Vaikom Satyagraha, from **30 March 1924 to 23 November 1925**, was a nonviolent agitation for access to the prohibited public environs of the **Vaikom Temple in the Kingdom of Travancore.**
- The movement was **triggered by the prohibition of people from oppressed classes**, especially Ezhavas, **from walking on the roads surrounding the Vaikom Mahadeva temple.**
- Kingdom of Travancore was known for its rigid and oppressive caste system.
- This movement stood as a formidable protest **against the entrenched practices of untouchability and caste discrimination** that had long plagued Indian society.
- The campaign was **led by Congress leaders T. K. Madhavan, K. Kelappan, K. P. Kesava Menon.**
- Other notable leaders who participated in the campaign include George Joseph, E. V. Ramasamy "Periyar" and it was noted for the active support and participation offered by different communities and a variety of activists.
- Most of the great temples in the princely state of Travancore had for years forbidden lower castes (untouchables) not just from entering, but also from walking on the surrounding roads.



- The **agitation was conceived by the Ezhava Congress leader and a follower of Sri Narayana Guru, T. K. Madhavan.**
- It demanded the right of the Ezhavas and 'untouchables' to use roads around the Vaikom Temple.
- It was the **first among the temple entry movements in India**, setting the stage for similar movements across the country.
- It **emerged amidst the growing nationalist movement and aimed to foreground social reform alongside political aspirations.**
- **Mahatma Gandhi himself visited Vaikom in March, 1925** and held discussions with leaders of various caste groups.
- **After the intervention of Mahatma Gandhi, a compromise was reached with Regent Sethu Lakshmi Bayi who released all those arrested and opened the north, south and west public roads leading to Vaikom Mahadeva Temple to all castes.**
- The Vaikom Satyagraha led to significant reforms, including the opening of three out of four roads surrounding the temple to people of all castes.

OTHER SATYAGRAHA

Mahatma Gandhi returned to India in **January 9, 1915.**

Gandhiji spent a year travelling around British India, getting to know the land and its people on the advice of Gopal Krishna Gokhale.

1917- CHAMPARAN SATYAGRAHA

- The Champaran Satyagraha of 1917 was the **first satyagraha movement led by Mahatma Gandhi in British India** and is considered a historically important rebellion in the Indian independence movement.
- It was a **farmer's uprising that took**



place in Champaran district of Bihar in the Indian subcontinent, during the British colonial period.

- The farmers were protesting against having to grow indigo with barely any payment for it.
- Champaran Satyagraha was the **first popular satyagraha movement**.

1918- AHMEDABAD MILL STRIKE

- In 1917, a heavy monsoon destroyed the crops of the season and led to an epidemic (plague), claiming more than 10% of lives in Ahmedabad.
- Following the Champaran Satyagraha movement in 1917, the Ahmedabad mill strike became the biggest civil disobedience movement of its time. In this strike, Gandhi used the tools of non-violence in the form of a hunger strike and satyagraha for the first time
- Ahmedabad Mill Strike was the result of the disagreement between the textile workers and the mill owners arose in March 1918 regarding the end of the plague bonus.
- Mill owners paid bonuses of 75% of their salary to retain the workers during the outbreak of the plague in 1917. But, after the end of the plague, workers were demanding an increase of 50 % in wages while mill owners were advocating discontinuance of the bonus. As a result, a deadlock was created.
- Gandhi intervened at the request of Anusuya Sarabhai and undertook a fast unto death. As a result, owners agreed to the 35% wage hike.



1918- KHEDA SATYAGRAHA

- The Kheda Satyagraha of 1918 was a satyagraha movement in the **Kheda district of Gujarat in India** organised by Mahatma Gandhi during the period of the British Raj.
- It was a **major revolt in the Indian independence movement**. It was the second Satyagraha movement, which was launched 7 days after the Ahmedabad mill strike.
- After the successful Satyagraha conducted at Champaran in Bihar, **Gandhi organised the movement to support peasants who were unable to pay the revenue because of famine and plague epidemic.**



1ST EVER NUCLEAR ENERGY SUMMIT

Why in News?

- Recently, **Brussels (Belgium) hosted the first-ever Nuclear Energy Summit** highlighting the role of nuclear energy in addressing climate change.
- It **co-chaired by the Prime Minister of Belgium and the Director General of the International Atomic Energy Agency (IAEA).**
- The **continuing crisis at the Zaporizhzhya nuclear power plant in Ukraine**, the first nuclear facility to have been caught in a dangerous armed conflict, has also been a source of grave concern.

Key Highlights of the nuclear summit:

- It is **organized by International Atomic Energy Agency (IAEA) and Belgium.**
- Aim: **To tackle global challenges** such as **reducing fossil fuel usage, enhancing energy security, and boosting economic development.**

- The UN Climate Change Conference (COP28) in Dubai (UAE) highlighted the indispensable role of nuclear energy in meeting climate goals.
 - The declaration signed by 22 world leaders **mentioned the need to triple nuclear energy capacity by 2050.**
 - The summit **coincided with the launch of the IAEA's Atoms4NetZero initiative,** emphasizing the importance of nuclear energy in the transition to clean energy.
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- Atoms4NetZero is an IAEA initiative that supports efforts by Member States to harness the power of nuclear energy in the transition to net zero.
 - The summit emphasized the importance of capacity building for project execution in countries embarking on nuclear energy development, ensuring efficient use of resources and support for nuclear projects.
 - The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) is central to global efforts to prevent the spread of nuclear weapons and promote peaceful uses of nuclear energy.
 - **Currently, nuclear energy is responsible for around 25 % of global low-carbon electricity production**
 - Advances such as Fusion Energy, and Small Modular Reactors (SMRs), with capacities of up to 300 MW(e) per unit, were highlighted as promising developments in nuclear technology.
 - The **International Atomic Energy Agency (IAEA),** as the organizer, **underscored its role in promoting safe, secure, and peaceful nuclear technologies worldwide.**

About Nuclear Energy:

- Nuclear power emits four times less carbon than solar farms or other renewable sources such as wind, hydropower, and geothermal.

- Nuclear power has **perennial availability** unlike wind or solar which are season or time-dependent.
- Nuclear power plants (NPP) also have **low operating costs, smaller land imprint and a longer life cycle** compared to all the other renewable energy sources
- Nuclear fission reactions are highly radioactive and **radiation leaks from reactors can prove fatal for human beings.**
- Example: Radiation leaks in Chernobyl, 1986 and disaster in Fukushima, 2011.
- **Nuclear power plants are capital intensive** and recent nuclear builds have suffered major cost overruns.
- **Solar and Wind energy are cheap and effective alternatives** as they promise to provide electricity between INR 2-4/unit.
- **Nuclear power plants produce highly radioactive waste** that must be carefully managed and stored for many years.
- The advancements in nuclear technology such as reactor technology, regulatory frameworks and waste management practices addresses the concerns regarding safety and risk associated with nuclear energy.

Status of Nuclear Energy in India:

- Nuclear energy **contributes about 3% to India's electricity generation, with 23 reactors in operation**, producing 7480 MW.
- There are **at least ten more reactors that are under construction**, and the capacity is supposed to triple to 22,480 MW by 2031-32.
- **Most reactors are Pressurized Heavy Water Reactors (PHWRs).**
- India's first 700 MWe PHWR unit, the Kakrapar Atomic Power Project (KAPP-3), started in 2021.
- The government plans to establish new plants like the one in Gorakhpur, Haryana.
- **India is developing "Bhavni," its first indigenous thorium-based nuclear plant, utilizing Uranium-233.**
- The experimental thorium plant "Kamini" is already operational in Kalpakkam.

KATCHATHEEVU ISLAND

Why in News?

The Katchatheevu Island has garnered attention for its **role in the India-Sri Lanka relationship**.

About Katchatheevu island:

- Katchatheevu is an **uninhabited island in Sri Lanka**.
- Katchatheevu is a 285-acre uninhabited **island in the Palk Strait between India and Sri Lanka**.
- It is located northeast of Rameswaram, approximately 33 km from the Indian coast, it sits about 62 km southwest of Jaffna, at the northern tip of Sri Lanka.
- **Katchatheevu is not suited for permanent human settlement** as there is no source of drinking water on the island.
- The **island's sole structure is St. Anthony's church**, an early 20th-century Catholic shrine, where Christian priests from India and Sri Lanka conduct an annual festival service attended by devotees from both countries.
- **The island was controlled by the British Ceylon (now Sri Lanka) since 1921**.
- Though the Indian government never controlled it, the island remained disputed until **1974 between India and Sri Lanka when India recognised Sri Lanka's sovereignty over the island**.
- The region was initially ruled by the Jaffna kingdom of Sri Lanka in the early medieval period, but **control later shifted to the Ramnad zamindari under Nayak dynasty of Madurai in the 17th century**.
- The ownership dispute over Katchatheevu between India and Sri Lanka, which **had been part of the Madras Presidency during the British Raj**, persisted until 1974, with both countries claiming the island as their own.
- Under Indo-Sri Lankan Maritime Agreement the island's transfer to Sri Lanka occurred in 1974.



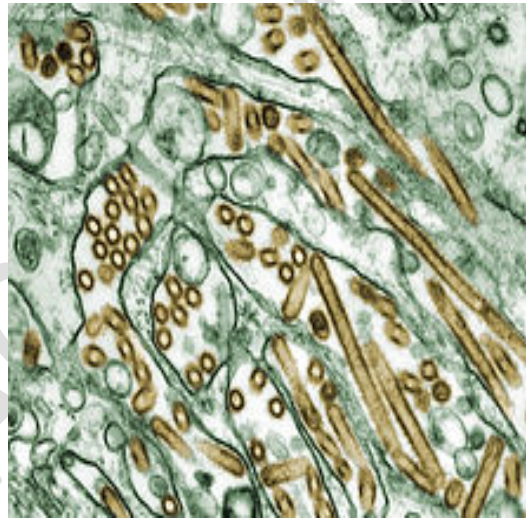
H5N1 BIRD FLU

Why in News?

H5N1 bird flu, a highly pathogenic virus, has been spreading globally, posing a significant threat to birds and wildlife.

About H5N1:

- Influenza A virus subtype H5N1 (A/H5N1) is a **subtype of the influenza A virus which can cause illness in humans and many other species.**
- H5N1 is **classified based on its surface proteins, hemagglutinin (H) and neuraminidase (N).**
- There are **18 H subtypes and 11 N subtypes**, e.g., A(H1N1) and A(H3N2)
- A bird-adapted strain of H5N1, called HPAI A(H5N1) for **highly pathogenic avian influenza virus of type A** of subtype H5N1, is the highly pathogenic causative agent of H5N1 flu, **commonly known as avian influenza ("bird flu").**
- Several H5N1 vaccines have been developed and approved, and stockpiled by a number of countries, including the United States (in its National Stockpile), Britain, France, Canada, and Australia, for use in an emergency.
- Human cases of H5N1 occur sporadically, with difficulty in human-to-human transmission.
- **The mortality rate is about 60% in infected individuals.**
- Human infections with H5N1 were first reported in 1997 during a poultry outbreak in Hong Kong.
- Human cases have mostly been reported from Asia, with some cases from Africa, Americas, and Europe.
- Descended from a 1996 outbreak in China, the current strain emerged in Europe in 2020, spreading globally by late 2021 and reaching Antarctica in 2024.
- Almost all these cases have been in people who were in close contact with infected birds.



- Scientists suggest climate change plays a role, in altering bird behaviour and facilitating virus spread.

OZONE OF JUPITER'S MOON

Why in News?

An international team of scientists, including from India, has discovered **strong evidence indicating the presence of ozone on Jupiter's moon Callisto**, shedding light on the complex chemical processes taking place on icy celestial bodies in the Solar System.

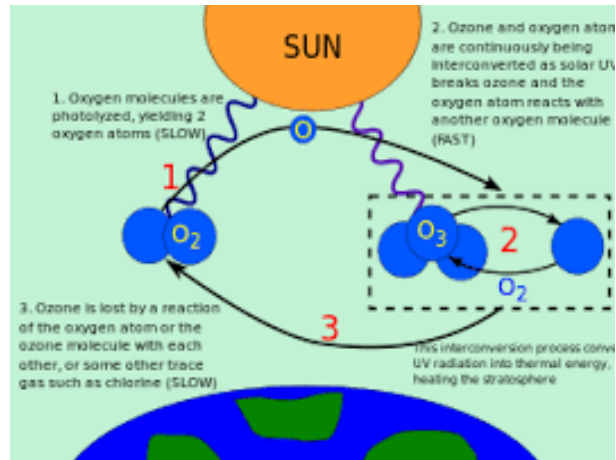
About Callisto:

- **Callisto ranks as one of Jupiter's largest moons** and is the third-largest moon in the Solar System, following Ganymede (Jupiter) and Titan (Saturn).
- **It was discovered in 1610, by Italian scientist Galileo Galilei** along with Jupiter's three other largest moons: Ganymede, Europa and Io.
- As per NASA, after **Saturn (146)**, **Jupiter (95) boasts the highest number of moons in the Solar System**.
- It is primarily composed of water ice, rocky materials, sulfur dioxide, and organic compounds.
- Its **surface is heavily cratered**, indicating a long history of being struck by asteroids and comets.
- It **also lacks the extensive seismic activity** seen on some of Jupiter's other moons, such as Io and Europa.



About Ozone:

- The **discovery of ozone on Callisto suggests the presence of oxygen**, which in turn is a fundamental ingredient required for the formation of complex molecules required for life.
- **Ozone, composed of three oxygen atoms (O₃) bonded together**, plays a vital role in shielding planets from harmful ultraviolet radiation.
- The **ozone layer, found in the lower part of the earth's stratosphere**, around 15-35 km above ground, serves as a shield.
- It **acts as a protective layer in Earth's atmosphere, absorbing most of the sun's harmful ultraviolet (UV) radiation and preventing it from reaching the surface.**
- Ultraviolet radiation in particular is harmful to many species (but also useful to some others).
- Two of its components, called **ultraviolet-B and ultraviolet-C** can damage DNA, trigger mutations, and increase the risk of skin cancer and cataracts in humans.
- Without the ozone layer, ultraviolet radiation levels would be much higher on the planet's surface, rendering it uninhabitable for many species and disrupting entire ecosystems.



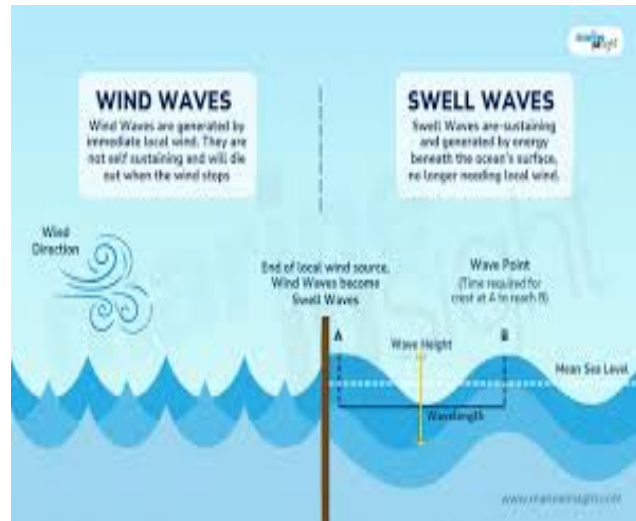
SWELL WAVES

Why in News?

Coastal areas in southern and central Kerala experienced inundation from swell waves, locally known as 'Kallakkadal,' prompting alertness from disaster management authorities.

About Swell Waves (KALLAKKADAL):

- Swell waves, **locally known as 'Kallakkadal'** are high-energy ocean waves that can cause flooding and damage to coastal areas.
- Kallakkadal refers to coastal flooding caused by swell waves during the pre-monsoon season (April-May) and sometimes during post monsoon along the southwest coast of India.
- The **term Kallakkadal, used by local fishermen**, is a combination of two Malayalam words, including Kallan and Kadal. "**Kallan means thief and Kadal means sea**, meaning "ocean that arrives as a thief.
- They are a series of surface gravity waves that are not affected by local winds. They are caused by distant storms, hurricanes.
- They have travelled over long distances from their area of origin, usually generated by distant weather systems or storms.
- They are formed by strong winds and storms in the ocean, which transfer energy to the water, creating large waves.
- These waves **typically have a consistent and smooth appearance** and can travel thousands of kilometres across the ocean's surface without breaking.
- Swell waves are a **significant factor in shaping coastal areas** and can cause inundation and erosion when they reach shore.
- Wave swells **have more limited frequency and direction pumping than that of the wind waves** which give a deep harsh prognosis.
- This is significant since swells decisively diverge from the source, showing the mode dispersion and the development of the more regular appearing shape and trajectory.
- They **can be in different frequency bands**, but in extreme cases they do not exceed 150 metres. Keenly and rarely 700 metres swells arise during very serious storms.



- Turbulent waves, miles from the hurricane origin, are able to move in the boustrophedon direction till they reach the shore.
- **Kallakkadal occurs without precursors or any kind of local wind activity** and as a result, it has been very difficult for the coastal population to get an advance warning.
- However, **early warning systems like the Swell Surge Forecast System — launched by the Indian National Centre for Ocean Information Services (INCOIS) in 2020** gives forewarning seven days in advance.

KONDA REDDI TRIBE

Why in News?

The **indigenous knowledge of the Konda Reddi tribe regarding the Indian laurel tree's water-storing ability** has been confirmed by forest officials in the Papikonda National Park.

About Indian Laurel tree:

- Forest authorities conducted an experiment by cutting the bark of the Indian laurel tree, revealing water splashing out, particularly in the summer, as claimed by the tribe.
- The water stored in Indian Laurel trees (*Terminalia tomentosa*) in Papikonda National Park in Alluri Sitarama Raju district.
- The **Indian laurel tree is native to Southeast Asia and regions of India.**
- It thrives in tropical and subtropical climates.
- **During dry summers, the Indian laurel tree accumulates water which has a strong odor and tastes sour.**
- Indian Laurel Tree **known as Indian Silver Oak** and valued for its timber commercially.



- The **wood of the Indian laurel has great commercial value.**
- It is **also known as Chinese banyan or Malayan banyan.**
- It belongs to the fig family Moraceae and is found mostly in Southeast Asia and Chinese regions.
- It **improves soil fertility, provides shade for crops and is a valuable fodder for the Konda Reddy tribe.**
- This experiment highlights several ethical values:
 - Respect for Indigenous Knowledge.
 - Collaboration and Partnership between forest officials and tribes.
 - Environmental Conservation
 - Sustainability

About Konda Reddy Tribe:

- Konda Reddis is a **Particularly Vulnerable Tribal Group inhabiting the banks of the river Godavari** and also in the hilly forest tracts of Godavari and Khammam districts of Andhra Pradesh.
- They are **one of the most backward tribal groups in the states of Andhra Pradesh and Telangana.**
- They can also be found in Tamil Nadu, Pondicherry, Karnataka, Kerala, Orissa and Maharashtra.
- Their **mother tongue is Telugu with a unique accent.**
- They are **found in the Eastern Ghats.**
- The **primary religion practiced by the Konda Reddy is folk Hinduism**, characterized by local traditions and cults of local deities worshiped at the community level.
- They **have their own institution of social control which is called 'Kul Panchayat'.**
- Every village has a traditional head called '**Pedda Kapu**'.



- The **post of head is hereditary** and the head is also the priest of the village deities.
- They are mainly shifting cultivators and depend largely on the flora and fauna of the forest for their livelihood.
- They collect and sell non-timber forest produce like tamarind, adda leaves, myrobalan, broom sticks etc. to supplement their meager income.
- They **cultivate jowar on a large scale, which is their staple food.**
- The **Konda Reddis are known for their eco-friendly practices** such as use of household articles made of bamboo, bottle gourd, and seed.
- **Traditionally the Reddy belong to the fourth of the Hindu Varnas, Sudra.** One section of the Reddy is called Kapu which means guardian.
- The **Reddy community has social divisions** such as clans, lineage, subcastes and sects. These social divisions regulate marital alliances.
- The Konda Reddy **tribe has been divided into exogamous classes** to regulate marital relations among these people.
- Generally, each sept is exogamous, but some septs are considered brother septs and marriage alliances with brother septs (endogamy) are prohibited.
- The **family is found to be patriarchal.**
- Monogamy is the rule in their families, but polygamous families are also found.
- Marriage by negotiation, love and elopement, by service, by capture and by exchange are socially accepted ways of obtaining mates.
- **Widow Remarriage is not permitted.** Being a dominant community, the Reddy have been primarily landlords and landholders. Social control is regulated through traditional caste and village councils.
- Their **main festivals are Ugadi, Akshade and Dussehra.**

CARDOMOM

Why in News?

The ongoing drought situation in the cardamom-producing centres of **Idukki** poses a threat to cardamom farmers.

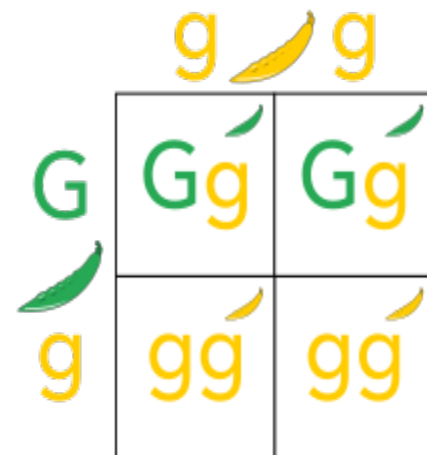
About Cardamom:

- Cardamom is a **spice made from the seeds of the *Elettaria cardamomum* plant**, also known as green cardamom or true cardamom.
- It is a **monotype genus of plants found in the tropical Indo-Malaya region**.
- The plant is **native to southern India** and is part of the ginger family.
- Cardamom has a **strong, warm flavour** that is both spicy and sweet.
- It is **grown in forest loamy soils**, which are usually acidic in nature with a pH range of 5.0–6.5
- Height: 600-1200 m above mean sea level.
- Temperature: 15°C to 35°C
- Rainfall: 1500 to 4000 mm
- The growth of cardamom is enhanced when planted in humus rich soils with low to medium available phosphorous and medium to high available potassium.
- Native to the evergreen rainy forests of the Western Ghats.
- Mainly **cultivated in Kerala, Karnataka, and Tamil Nadu**.



PUNNETT SQUARE

- The Punnett square is a **grid used to predict the possible genetic outcomes of offspring when two individuals with known genotypes are crossed**.
- It is **named after British geneticist Reginald Punnett**, who devised the approach in 1905.
- Punnett Squares are **commonly used in biology to understand inheritance patterns**.
- It consists of a simple grid with squares representing possible combinations of traits inherited from each parent.



- The Punnett square is a tabular summary of possible combinations of maternal alleles with paternal alleles.
- This tool helps visualize the probabilities of different traits appearing in offspring and is commonly used in biology to understand inheritance patterns, such as dominant and recessive genes.
- Researchers utilize Punnett squares alongside Mendelian inheritance principles to study genetic traits in offspring, including those of animals and humans.

S.A.R.A.H

Why in News?

Ahead of World Health Day, focused on 'My Health, My Right', the World Health Organization (WHO) announces the launch of S.A.R.A.H., a digital health promoter prototype with enhanced empathetic response powered by generative artificial intelligence (AI).

About S.A.R.A.H:

- S.A.R.A.H. is a Smart AI Resource Assistant for Health that represents an evolution of AI-powered health information avatars, using new language models and cutting-edge technology.
- Aim: To provide accurate health information and support users in optimizing their health and well-being journey.
- It **engages users in 8 languages** on various health topics, **accessible 24/7 on any device.**
- It **provides information on major health topics**, including healthy habits, mental health, and other risk factors related to overall physiological health.
- It **supports users in understanding risk factors for diseases** like cancer, heart disease, lung disease, and diabetes.



- It can help people access up-to-date information on quitting tobacco, being active, eating a healthy diet, and de-stressing among other things.

GRAVITY HOLE IN INDIAN OCEAN

Why in News?

Scientists from the Indian Institute of Science in Bengaluru, India, have proposed a credible explanation for the “gravity hole” in the Indian Ocean.

About Gravity Hole:

- Gravity Hole is where Earth’s gravitational pull is weaker, leading to a sea level dip of over 328 feet (100 meters).
- Using computer simulations dating back 140 million years, the researchers suggest that **plumes of magma from deep within the planet**, similar to those that create volcanoes, **are responsible for the anomaly.**
- **These plumes**, originating from the disappearance of an ancient ocean between the Indian plate and Asia, **are believed to have brought low-density material closer to Earth’s surface, shaping the “gravity hole.”**
- The “gravity hole” is a **circular depression in the Indian Ocean** that has a weaker gravitational pull than the rest of the planet.
- It’s **officially called the Indian Ocean geoid low** and is the world’s largest gravity anomaly.



TOTAL SOLAR ECLIPSE

Why in News?

Recently, a **total solar eclipse crossed North America**, passing over Mexico, the United States, and Canada.

About Solar Eclipse:

- A solar eclipse takes place **when the Moon moves in the middle of Earth and the Sun.**
- The **moon blocks the light of the Sun**, either fully or partially, **which casts a huge shadow on some parts of the world.**

About Total Solar Eclipse:

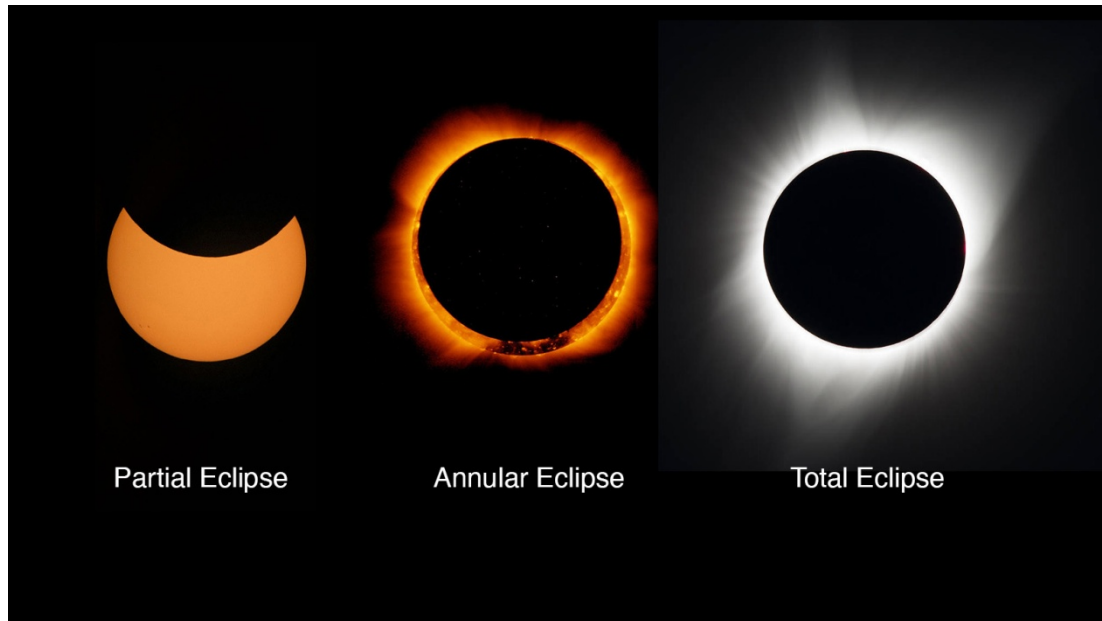
- When the **moon blocks the sun entirely**, the areas in the centre of the moon's shadow at the time witness a total solar eclipse.
- A full solar eclipse, known as totality, is almost as dark as night.
- A glimpse of the sun's corona (Sun's outer atmosphere) is visible (usually not visible due to the bright face of the Sun).
- At maximum point of the eclipse (midpoint of time of totality), the sky goes dark and temperatures can fall.

Types of Solar Eclipse:

There are **four** different types of solar eclipses:

1. **Total Solar Eclipse:** A total solar eclipse occurs when the Moon passes directly between the Earth and the Sun, blocking out the Sun's entire disk from view.
2. **Annual Solar Eclipse:** An annual solar eclipse, also known as an annular eclipse, happens when the Moon passes directly between the Earth and the Sun but does not completely cover the Sun's disk.
3. **Partial Solar Eclipse:** A partial solar eclipse occurs when the Moon partially obscures the Sun's disk as viewed from Earth. During a partial solar eclipse, only a portion of the Sun is blocked by the Moon.

4. **Hybrid Solar Eclipse:** A hybrid solar eclipse, also known as an annular-total eclipse, is a rare type of eclipse that transitions between an annular and a total solar eclipse along its path.



ALLOCATION OF SYMBOLS TO POLITICAL PARTY

Why in News?

The Supreme Court declined to consider a petition submitted by the ruling Bharat Rashtra Samiti (BRS) party in Telangana, contesting the allocation of election symbols to two other parties.

Provision of Election Symbols Allotment To Political Parties:

- The **ECI (Election Commission of India)** is responsible for the allotment of **symbols** as per the Election Symbols (Reservation and Allotment) Order, 1968.
- It is meant to provide for specification, reservation, choice and allotment of symbols at elections in Parliamentary and Assembly Constituencies, for the recognition of political parties.

- A party is recognised as a 'national' or 'state' party under the provisions of the **Election Symbols (Reservation and Allotment) Order, 1968** (Symbols Order) by the ECI.
- **Election Symbols can be either reserved**, meaning they are exclusive to a recognised political party, or 'free'.
- **Recognised national and state parties get exclusive symbols.**
Example: During selecting an election symbol for the 1993 Uttar Pradesh Assembly polls, Samajwadi Party leader picked the symbol of a bicycle, believing it would represent the farmers, the poor, laborers, and the middle class.
- **For registered but unrecognized political parties, the free symbol is allotted as a common symbol during an election** if that party contests in two Lok Sabha constituencies or in 5% of seats to the Assembly of a State as the case may be.
- These parties are newly registered or have not secured enough percentage of votes in the Assembly or General elections to fulfill the prescribed criteria for a state party.

About Political System of India:

- India has a **multi-party system**.
- The **Election Commission of India (ECI)** accords recognition to the national level and the state level political parties **based upon objective criteria**.
- A **recognised political party enjoys privileges like** a reserved party symbol, free broadcast time on state-run television and radio, consultation in the setting of election dates, and giving input in setting electoral rules and regulations.
- **Other political parties that wish to contest local, state or national elections are required to be registered by the Election Commission of India.**
- **Registered Parties are upgraded as recognised National Party or State Party by the ECI** if they meet the relevant criteria after a Lok Sabha or State legislative assembly election.
- The **Recognised Party status is reviewed periodically by the ECI.**

NATIONAL PARTY:

A registered party is recognised as a **national party** only if it fulfils any one of the three conditions listed below:

- 1) The party win **2% of seats in the Lok Sabha** from **at least three different states**.
- 2) **At a general election** to Lok Sabha or Legislative Assembly, the **party polls 6% of votes in any four or more states** and **in addition it wins four Lok Sabha seats**.
- 3) The **party gets recognition as a state party in four states**.

STATE PARTY:

A registered party is recognised as a **state party** only if it fulfils **any one of the five conditions** listed below:

- 1) A party **should secure at least 6% of valid votes polled in an election to the state legislative assembly** and **win at least 2 seats in that state assembly**.
- 2) A party **should secure at least 6% of valid votes polled in an election to Lok Sabha and win at least 1 seat in Lok Sabha**.
- 3) A party **should win at least 3% of the total number of seats** or **a minimum of three seats in the Legislative Assembly, whichever is higher**.
- 4) A party **should win at least one seat in the Lok Sabha for every 25 seats** or any fraction thereof allotted to that State.
- 5) Under the liberalised criteria, one more clause that it will be eligible for recognition as state party **if it secures 8% or more of the total valid votes polled in the state**.

INDIA ELIMINATED KALA AZAR

Why in News?

India has successfully achieved its target to eliminate visceral leishmaniasis, commonly known as kala-azar, according to data from the National Centre for Vector Borne Diseases Control (NCVBDC).

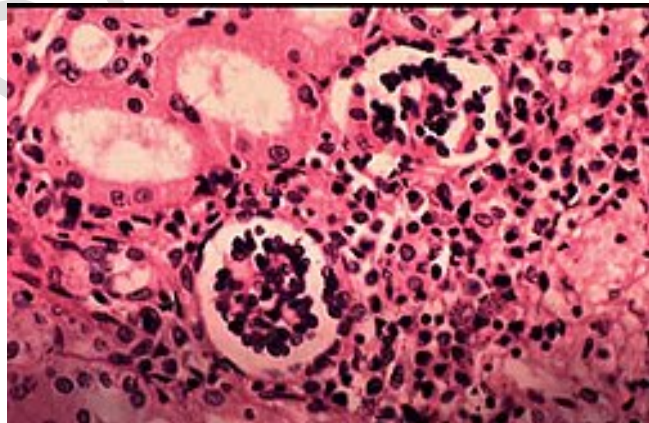
India had initially aimed to eliminate kala-azar by 2010, but the target was extended until 2023 due to persistent challenges.

Statistics:

- According to the most recent data from NCVBDC, **India recorded a total of 520 cases of kala-azar in 2023 nationwide**, thus fulfilling the elimination criteria established by the World Health Organization (WHO).
- **WHO criteria stipulates that no area within the country should report more than one case per 10,000 people.**
- According to WHO, in 2020, India represented 18% of the world's kala-azar cases.

About Kala Azar:

- Visceral leishmaniasis (VL), also known as kala-azar or "black fever", is the **most severe form of leishmaniasis** and, without proper diagnosis and treatment, is **associated with high fatality**.
- Kala-azar, a **vector-borne disease caused by protozoan parasites transmitted through sandfly bites**, has posed a significant health challenge for decades, particularly in states like Bihar, Jharkhand, West Bengal, and Uttar Pradesh.
- Leishmaniasis is a disease **caused by protozoan parasites of the genus Leishmania**.
- The **parasite migrates to the internal organs** such as the liver, spleen (hence "visceral"), and bone marrow, and, if left untreated, will almost always result in the death of the host.



- Signs and **symptoms** include fever, weight loss, fatigue, anemia, and substantial swelling of the liver and spleen.
- VL is the **second-largest parasitic killer in the world** (after malaria).
- In India, it's caused by *Leishmania donovani*, with the term "kala-azar" meaning "black disease" due to skin discoloration.
- **Post-Kala-azar Dermal Leishmaniasis (PKDL)** occurs when the parasite affects skin cells, resulting in dermal lesions.
- Despite persistent challenges, India met its elimination goal, initially set for 2010 but extended until 2023.
- Kala-azar has long been a health concern in states like Bihar, Jharkhand, West Bengal, and Uttar Pradesh.
- As per the WHO, in 2020, India accounted for 18 per cent of the global burden of kala-azar.
- The elimination has come after government interventions, including **indoor spraying to kill sandflies, sealing potential breeding sites, and mobilising healthcare workers** to ensure proper treatment completion.
- In 2023, India reported only 520 cases of kala-azar, meeting the elimination criteria defined by the World Health Organization (WHO).
- The National Vector Borne Disease Control Programme (NVBDCP) started in 2003-04 to prevent and control diseases like Japanese Encephalitis (JE), Dengue, Kala-azar, Lymphatic Filariasis, Malaria, and Chikungunya.

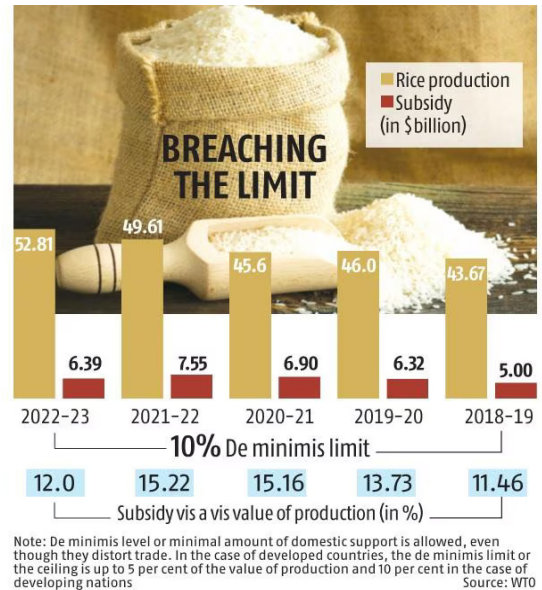
PEACE CLAUSE (WORLD TRADE ORGANIZATION)

Why in News?

India has invoked the peace clause at the World Trade Organization (WTO) for the fifth consecutive time for the marketing year 2022-23 (October-September) due to breaching the prescribed subsidy limit for rice offered to its farmers.

About Peace Clause:

- At the Bali ministerial meeting in December 2013, WTO members agreed to temporarily implement a mechanism known as the Peace Clause. They also pledged to work on a permanent solution through negotiations.
- According to global trade rules, **a WTO member country's food subsidy bill shouldn't exceed 10% of the value of production, based on the reference price of 1986-88.** Subsidies over and above the prescribed ceiling are seen as trade-distorting.
- India has been complaining that 10 per cent subsidy ceiling is calculated on the basis of the reference price of 1986-88. This reference price has become outdated long ago.
- This is the minimal amounts of domestic support that is allowed, even though it may distort trade. In case of developed countries, the de minimis limit or ceiling is up to 5 % of value of production and 10 % in case of developing nation.
- While the value of India's production of rice was \$52.8 billion in 2022-23, a subsidy worth \$6.39 billion was given to farmers during the year, India notified to the WTO.
- **This means the rice subsidy was 12 per cent of the value of production**, thereby breaching the 10 per cent domestic support ceiling, which is in accordance with global trade rules.
- However, there is no immediate repercussion for the breach since India has invoked the "peace clause", agreed upon at the Bali ministerial of WTO in 2013.
- This provides immunity to developing countries from challenges for breaching the ceiling for wheat and rice until a permanent solution is found.
- India defended itself by stating that stocks under the programme were "acquired and released in order to meet the domestic food security needs of India's poor and vulnerable population, and not to distort trade or adversely affect the food security of other Members.



- India has been seeking amendments to the formula for calculating the food subsidy cap and has been pushing hard to fast track its long-pending demand for a “permanent solution” to the issue of public stockholding.
- Through its public stockholding programme, the government procures foodgrains at a predetermined price and then provides it free of cost to around 80 million through the public distribution system.
- A permanent solution is crucial since some developed countries have been raising questions over India’s minimum support price programme for foodgrains, particularly rice, since the subsidy has breached the suggested limit under the WTO trade norms over the last few years.

About WTO: WORLD TRADE ORGANIZATION

- The World Trade Organization (WTO) is an **intergovernmental organization headquartered in Geneva, Switzerland.**
- It **regulates and facilitates international trade.**
- Governments use the organization to establish, revise, and enforce the rules that govern international trade in cooperation with the United Nations System.
- The **WTO is the world's largest international economic organization, with 164 member states representing over 98% of global trade and global GDP.**
- The WTO facilitates trade in goods, services and intellectual property among participating countries by providing a framework for negotiating trade agreements.
- It **usually aims to reduce or eliminate tariffs, quotas, and other restrictions;** these agreements are signed by representatives of member governments and ratified by their legislatures.
- It **also administers independent dispute resolution for enforcing participants' adherence to trade agreements and resolving trade-related disputes.**



- The **organization prohibits discrimination between trading partners, but provides exceptions for environmental protection, national security, and other important goals.**
- It **officially commenced operations on 1 January 1995**, pursuant to the 1994 Marrakesh Agreement, **thus replacing the General Agreement on Tariffs and Trade (GATT) that had been established in 1948.**
- Its **top decision-making body is the Ministerial Conference**, which is composed of all member states and usually convenes biennially.
- Its **day-to-day functions are handled by the General Council**, made up of representatives from all members.

PETER HIGGS

Why in News?

Nobel prize-winning physicist Peter Higgs, who proposed the existence of the so-called "God particle" that helped explain how matter formed after the Big Bang, **has died at age 94.**

About Peter Higgs:

- Peter Ware Higgs (29 May 1929 – 8 April 2024) **was a British theoretical physicist**, professor at the University of Edinburgh, and **Nobel laureate in Physics** for his work on the mass of subatomic particles
- **Peter Higgs predicted the existence of a new particle**, which came to be known as the Higgs boson, **in 1964.**
- He theorized that there must be a sub-atomic particle of certain

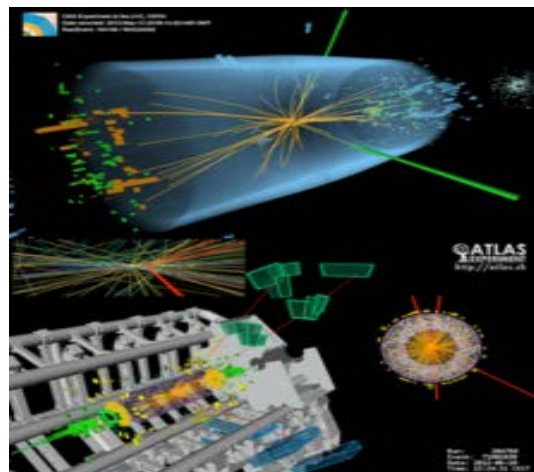


dimension that would explain how other particles — and therefore all the stars and planets in the universe — acquired mass.

- Without something like this particle, the set of equations physicists use to describe the world, known as the standard model, would not hold together.
- Higgs' work helps scientists understand one of the most fundamental riddles of the universe: how the Big Bang created something out of nothing 13.8 billion years ago.
- Without mass from the Higgs, particles could not clump together into the matter we interact with every day.
- But it would be almost 50 years before the particle's existence could be confirmed.
- **In 2012, in one of the biggest breakthroughs in physics in decades, scientists at CERN, the European Organization for Nuclear Research, announced that they had finally found a Higgs boson using the Large Hadron Collider.**
- The collider was designed in large part to find Higgs' particle. It produces collisions with extraordinarily high energies in order to mimic some of the conditions that were present in the trillionths of seconds after the Big Bang.
- **Peter Higgs won the 2013 Nobel Prize in Physics for his work**, alongside Francois Englert of Belgium, who independently came up with the same theory.

About Higgs Boson:

- The **Higgs boson is the fundamental force-carrying particle of the Higgs field**, which is responsible for granting fundamental particles their mass.
- It, sometimes called the Higgs particle is an elementary particle in the Standard Model of particle physics produced by the quantum excitation of the Higgs field, one of the fields in particle physics theory.
- It is **one of the 17 elementary particles**



that make up the Standard Model of particle physics, which is scientists' best theory about the behaviors of the universe's most basic building blocks.

- In the Standard Model, the **Higgs particle is a massive scalar boson with zero spin, even (positive) parity, no electric charge, and no colour charge that couples to (interacts with) mass.**
- It is the **only elementary particle with no spin.**
- It is also **very unstable**, decaying into other particles almost immediately upon generation.
- Higgs boson plays such a fundamental role in subatomic physics that it is sometimes referred to as the "God particle."

DOXXING

Why in News?

A woman made a complaint to the Mumbai Police against a man who had shared a video of her dancing at an event without her consent.

About Doxxing:

- **Doxxing is a form of online harassment where someone's private details are publicly disclosed.**
- This includes sensitive data such as phone numbers, private emails, medical records, government ID numbers, live locations, insurance details, and confidential employment information.
- Doxxing also involves the release of private or semi-private content without the consent of the individual, who did not intend for it to be shared publicly.
- Such information is **usually obtained through illegal methods such as hacking or theft.**



Hacker Lorem
@Hacker_Lorem

@Ipsum434's real name is Happy Traveler. He lives at 123 Sit Amet Avenue.



- There is no law in place to prevent and/or punish doxxing directly, though there are laws in place against acts like:
 - voyeurism (Section 354C IPC and IT Act).
 - divulging sexually explicit content (The IT Act) and obscene content (Section 292 IPC).
 - defamation (Section 499 IPC) and online stalking (Section 354D IPC).

Preventive Measures:

- **Use strong passwords** that vary between platforms, incorporating a mix of letters, numbers, and symbols and are not repeated across platforms.
- **Add an extra layer of security by setting up multi-factor authentication** on your accounts whenever it's available.
- **Avoid posting photos that reveal your neighbourhood, house facade, house keys, identifiable landmarks** etc.
- Reporting through the **National Cyber Crime Reporting Portal** online etc.

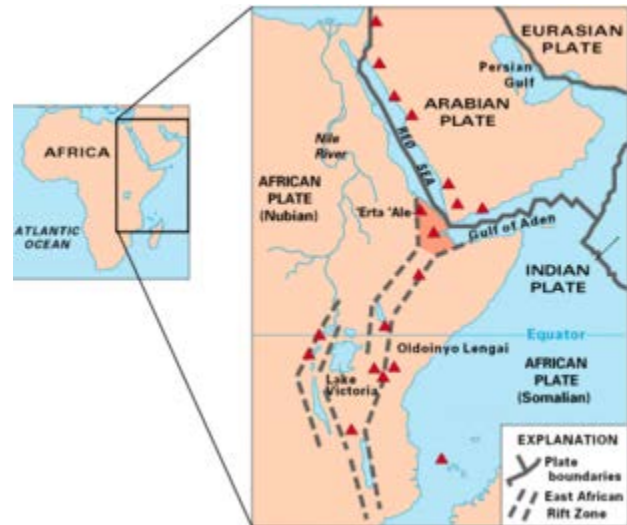
AFAR TRIANGLE

Why in News?

- Geologists have **discovered a fault in Africa's Afar Triangle**, indicating a potential formation of the world's sixth ocean.
- Recent geological findings suggest that Africa's Afar Triangle **could be the birthplace of a new ocean in 5 to 10 million years**.
- This **geological phenomenon is driven by tectonic plate movements**, particularly in the East African Rift system. The rift, caused by the separation of tectonic plates, could split the African continent in 5 to 10 million years, leading to the creation of a new ocean basin.
- This phenomenon, unfolding amidst the rich and diverse landscapes of the African continent, offers a rare glimpse into the dynamic processes that shape Earth's geography.

About AFAR TRIANGLE:

- The Afar Triangle, also known as the Afar Depression, is **located in the Horn of Africa** and represents the northernmost portion of the Great Rift Valley.
- The Afar Triangle is a **geological depression caused by the Afar Triple Junction**, which is part of the Great Rift Valley in East Africa.
- The region has disclosed fossil specimens of the very earliest hominins; that is, **the earliest of the human clade**, and it is thought by some paleontologists to be the cradle of the evolution of humans.
- The **Awash River is the main waterflow into the region**, but it runs dry during the annual dry season, and ends as a chain of saline lakes.
- It overlaps Eritrea, Djibouti, and the Afar Region of Ethiopia and contains Lake Assal, Africa's lowest point.
- The region experiences extreme heat and drought, with some of the hottest temperatures on Earth.
- It is bordered by the Ethiopian Plateau, the Danakil block, the Somali Plateau, and the Ali-Sabieh block.
- Fossil sites in the Afar region, such as Hadar and Dikika, have yielded important discoveries related to early hominins and human tool culture.
- The lowlands are affected by heat, drought, and minimal air circulation, and contain the hottest places (year-round average temperatures) of anywhere on Earth.



REPRESENTATION OF PEOPLE ACT (RPA)

Why in News?

In the Surat Lok Sabha constituency, the BJP candidate won uncontested due to the rejection of the Congress candidate's nomination papers (due to alleged discrepancies in the signatures of his proposers) and the withdrawal of other candidates.

About:

- **Constitution allows Parliament to make provisions in all matters relating to elections to the Parliament and State Legislatures.**
- In exercise of this power, the **Parliament has enacted laws like Representation of the People Act 1950 (RPA Act 1950), Representation of the People Act 1951 (RPA Act 1951).**
- Nominations in elections follow specific criteria outlined in the Representation of the People Act, 1951 (RPA 1951).
- Section 33 of the RPA 1951 specifies the requirements for valid nominations, including the need for proposers from the respective constituency.
- The **Returning Officer (RO) can reject nominations if signatures are found to be not genuine, as per Section 36 of the RPA.**

Representation of the People Act (RPA), 1950:

The Representation of the People Act of 1950 (RPA 1950) is an act of the Indian Parliament, which was **enacted to deal with the electoral system of the nation at the national and state level.**

RPA 1950 is to provide for the:

- **Allocation of seats** to Lok sabha and state legislative assemblies, and state legislative councils.
- **Delimitation of constituencies** for the purpose of election.
- **Qualifications and disqualifications of voters.**
- **Preparation of electoral rolls.** A person cannot be enrolled for over one constituency. He or she can be disqualified and barred from voting if found to be of unsound mind or is not an Indian citizen.
- **Manner of filling the seats.**
- The Indian President can alter the constituencies after due consultation with the Election Commission.

Representation of the People Act (RPA), 1951:

The Representation of the People Act, 1951 is an act of Parliament of India **to provide for the conduct of election** of the Houses of Parliament and to the House or Houses of the Legislature of each States.

It also talks about the **qualifications and disqualifications for membership of those Houses**, the **corrupt practices and other offences** at or in connection with such elections and the decision of doubts and disputes arising out of or in connection with such elections.

The Act makes **provisions for dispute redressal in matters connected to elections.**

Representation of People Act, 1951 Act contains provisions relating to the following electoral matters:

- **Qualifications and disqualifications for membership** of Parliament and State Legislatures
- **Notification of general elections**
- **Administrative machinery** for the conduct of elections
- **Registration of political parties**
- **Conduct of elections**
- **Free supply of certain material** to candidates of recognised political parties
- **Disputes regarding elections**
- Corrupt practices and electoral offences
- Powers of Election Commission in connection with inquiries as to disqualifications of members.
- **Bye-elections** and time limit for filling vacancies.
- Miscellaneous provisions relating to elections.
- **Barring the jurisdiction of civil courts.**

The conduct of elections includes the following matters:

- Nomination of candidates
- Candidates and their agents
- General procedure at elections

- The poll
- Counting of votes
- Multiple elections
- Publication of election results and nominations
- Declaration of assets and liabilities
- Election expenses

KUCHIPUDI

Why in News?

Kuchipudi, one of the oldest dance forms of India, faces challenges among the younger generation in the Kuchipudi village in the Krishna district in Andhra Pradesh because of lack of interest among the younger generation and insufficient government support.

About Kuchipudi:

- Kuchipudi is **one of the eight major Indian classical dances.**
- It **originates from a village named Kuchipudi** in the Indian state of **Andhra Pradesh.**
- Kuchipudi is a **dance-drama performance**, with its roots in the ancient Hindu Sanskrit text of Natya Shastra.
- It developed as a religious art linked to traveling bards, temples and spiritual beliefs, like all major classical dances of India.
- Kuchipudi tradition holds that **Tirtha Narayana Yati** – a sanyassin of Advaita Vedanta persuasion, **and his disciple, an orphan named Siddhendra Yogi, founded and systematized the modern version of Kuchipudi in the 17th century.**
- Kuchipudi **largely developed as a Krishna-oriented Vaishnavism tradition**, and it is **known by the name of Bhagavata Mela in Thanjavur.**



- The **traditional Kuchipudi was performed by all males troupe.** A dancer in a male role would be in Agnivastra, also known as Bagalbandi, wear a dhoti.
- Vocal and instrumental Carnatic music in the Telugu language accompanies the performance.
- The **typical musical instruments in Kuchipudi are mridangam, cymbals, veena, flute and the tambura.**

HOME VOTING

Why in News?

- The Election Commission of India (ECI) has introduced a ground-breaking initiative for the 2024 Lok Sabha elections, providing the **option of home voting for elderly citizens above 85 years of age and Persons with Disabilities (PwDs) with a 40% benchmark disability.**
- This initiative aims to enhance inclusivity and accessibility in the electoral process.

Additional steps taken by the Election Commission (EC) to promote inclusive voting include:

- Abolishing Form-M requirement for Kashmiri migrants residing in Jammu and Udhampur, simplifying the voting process for them.
- **Implementing Systematic Voter's Education and Electoral Participation (SVEEP) to engage Persons with Disabilities (PwDs)** and educate their friends, families, and polling officials.
- **Allowing voting by postal ballot for special voters,** service voters (including members of the armed forces, police forces serving outside their states, and government employees serving outside India), voters on election duty, and electors subjected to preventive detention.
- Introducing the proposed Multi-Constituency Remote Electronic Voting Machine (RVM), enabling migrant voters to vote from their current place of residence.
- Facilitating proxy voting, allowing registered electors, particularly service voters, to delegate their voting rights to a representative of their choice.

MUDUMALAI TIGER RESERVE

Why in News?

The first-ever herpetofaunal survey in Mudumalai Tiger Reserve recorded 82 species of reptiles and amphibians. Conducted in February, it covered Theppakadu, Kargudi, and Nilakottai forest ranges.

The survey aimed to estimate the region's diversity and aid conservation efforts. It identified species like the Indian rock python and mugger crocodile, guiding species-specific conservation plans.

About herpetofaunal survey:

A herpetofaunal survey is a **systematic study** conducted to document and assess the diversity, distribution, abundance, and ecology of reptiles and amphibians within a specific geographical area.

About Mudumalai Tiger Reserve:

- Mudumalai Tiger Reserve is located in the Nilgiris District of Tamil Nadu state at the trijunction of three states, viz, Karnataka, Kerala and Tamil Nadu.
- It has a common boundary with Wayanad Wildlife Sanctuary (Kerala) on the West, Bandipur Tiger Reserve (Karnataka) on the North, together forming a large conservation landscape for flagship species such as Tiger and Asian Elephant.
- Mudumalai National Park is a **national park in the Nilgiri Mountains in Tamil Nadu** in southern India.
- **A part of this area has been protected since 1940.**



- Mudumalai national park has been part of Nilgiri Biosphere Reserve since 1986 and was declared a tiger reserve together with a buffer zone of 367.59 km² in 2007.
- It is a **part of Nilgiri Biosphere Reserve** (1st Biosphere Reserve in India) along with Wayanad Wildlife Sanctuary (Kerala) in the West, Bandipur National Park (Karnataka) in the North, Mukurthi National Park and Silent Valley in the South.
- **Mudumalai tiger reserve is among the 14 Indian tiger reserves that were awarded the Conservation Assured | Tiger Standards (CA|TS) status for effective management of target species.**
- The climate of Mudumalai is moderate. It experiences cold weather during the month of December or the beginning of January and hot weather is experienced during the months of March and April.
- Flora:
 - The Reserve has **tall grasses, commonly referred to as 'Elephant Grass'.**
 - Bamboo of the giant variety, valuable timber species like Teak, Rosewood, etc.
 - There are **several species of endemic flora.**
- Fauna: Flagship Species **Tiger and Asian Elephant** are found in this tiger reserve.

NITROPLAST

Why in News?

Scientists have discovered a **new organelle, termed a nitroplast**, within algae that can convert nitrogen gas into a form usable for cell growth.

About Nitroplast:

- A **nitroplast is an organelle found in certain species of algae**, particularly in the marine algae *Braarudosphaera bigelowii*.
- It **plays a crucial role in nitrogen fixation**, a process previously thought to be exclusive to bacteria and archaea.

- It evolved from a symbiotic relationship between the algae and a bacterium called UCYN-A around 100 million years ago.
- This ground-breaking finding challenges the conventional belief that only bacteria and archaea can perform nitrogen fixation.
- The nitroplast, found in the algae *Braarudosphaera bigelowii*, is considered the first nitrogen-fixing organelle in eukaryotes.
- The **discovery of nitroplasts challenges previous notions about the exclusivity of nitrogen fixation to prokaryotic organisms.**
- Nitroplasts exhibit typical organelle characteristics, meeting two key criteria:
 - they are **inherited during cell division** and
 - they **rely on proteins provided by the host cell.**
- The discovery of nitroplasts has significant implications for both cellular biology and agricultural science.



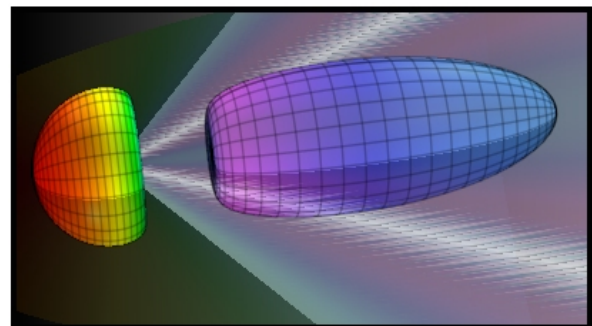
TACHYONS

Why in News?

A new paper suggests that the **universe may be dominated by particles called tachyons, which move faster than light.**

About Tachyons:

- A tachyon or tachyonic particle is a **hypothetical particle that always travels faster than light.**
- Physicists believe that faster-than-light particles cannot exist because they are inconsistent with the known laws of physics.



- **Coined by physicist Gerald Feinberg in 1967, they're distinct from bradyons, which travel slower than light.**
- While bradyons include familiar particles like protons and electrons, **tachyons have never been observed.**
- Tachyons violate known principles like causality and are proposed as a potential explanation for dark matter.
- Unlike ordinary particles, which have positive mass, **tachyons are theorized to possess imaginary mass.**
- This implies that **as their energy decreases, their speed increases, leading to a phenomenon where they gain energy as they lose speed**, defying the principles of relativity.
- Tachyons are postulated to travel faster than the speed of light, violating the fundamental tenets of Einstein's theory of special relativity. If real, this would have profound implications for our understanding of causality and the structure of the universe.
- **According to special relativity, particles with mass can't exceed light speed in a vacuum due to infinite energy.**
- This intriguing property implies that tachyons could potentially travel faster than light without violating current understanding of the laws of physics.
- Tachyons, however, are believed to have imaginary mass, allowing faster-than-light travel without violating known physics laws.
- **They would slow down with energy gain and accelerate with energy loss.**
- Scientists have conducted a few experiments in search of tachyons using a detector called a Cherenkov detector.
- In this setup, particles move through a medium, and if their speed exceeds the speed of light for that medium, Cherenkov radiation occurs.
- It is to be noted that while nothing can travel faster than light in a vacuum, **certain mediums allow particles to potentially exceed the cosmic speed limit.**

SRINAGAR- WORLD CRAFT CITY

Why in News?

Srinagar is being considered for the prestigious World Craft City (WCC) title by the World Crafts Council International (WCCI).

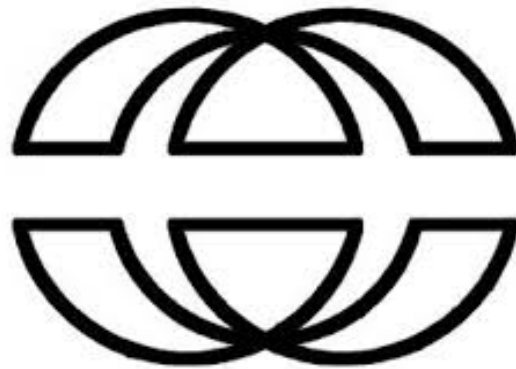
About World Craft City Programme:

- It is a **groundbreaking initiative launched in 2014** by the World Crafts Council AISBL (WCC-International).
- Aim: To recognize the pivotal role played by the local authorities, craftspeople, and communities in cultural, economic, and social development worldwide.
- A **three-member team, is inspecting craft clusters, processes, and artisan status in Srinagar.**
- The team is evaluating the preservation and promotion of traditional crafts, including Pashmina shawls, carpets, and papier mâché.
- Cities are selected based on their efforts in preserving traditional crafts and building new market linkages.
- Srinagar's final nomination decision is expected in the next two months.
- **Being listed in the WCC will bring attention to Srinagar's crafts and showcase its ancient techniques to the world.**
- The recognition could lead to new market opportunities and increased global visibility for Srinagar's crafts.
- The **WCCI has proposed to hold its annual meeting in Srinagar in November,** expecting 200 delegates from WCC-tagged cities worldwide.
- Under these initiatives **Jaipur (Rajasthan), Mammalapuram (Tamil Nadu) and Mysore have been added as craft cities from India.**



About World Crafts Council:

- The World Craft City (WCC) **initiative was launched in 2014** by the World Crafts Council International (WCCI), a Kuwait-based organization.
- It was founded by Ms. Aileen Osborn Vanderbilt Webb, Ms. Margaret M. Patch, and Smt Kamaladevi Chattopadhyay at the **1st World Crafts Council General Assembly in New York on June 12, 1964.**
- It acknowledges the contributions of local authorities, craftspeople, and communities to cultural, economic, and social development worldwide.
- WCC **aims to establish a network of craft cities globally**, promoting the principles of the creative economy and preserving traditional crafts.
- It **promotes fellowship among craftspersons** by offering them encouragement, help, and advice.
- It **fosters and assists cultural exchange** through conferences, international visits, research study, lectures, workshops, exhibitions, and other activities.
- The **WCC is organised into five regions:** Africa, Asia Pacific, Europe, Latin America, and North America. The **organization is affiliated to UNESCO.**



SHOMPEN TRIBE

Why in News?

For the first time in **Andaman and Nicobar Islands, seven members of the Shompen tribe, a particularly vulnerable tribal group (PVTGs)** of Great Nicobar Islands **exercised their voting rights** for the lone Lok Sabha seat in the Andaman and Nicobar Lok Sabha constituency.

About Shompen Tribe:

- The Shompen or Shom Pen are the **indigenous people of the interior of Great Nicobar Island**, part of the Indian union territory of Andaman and Nicobar Islands.
- The **Shompen are a designated as a Particularly Vulnerable Tribal Group** within the list of Scheduled Tribe.
- The Shompens living on the western side of the island call themselves Kalay, and those on the eastern side Keyet, with both groups referring to each other as Buavela.
- **Before the first outside contact with the Shompen in the 1840s**, there is no reliable information about these peoples.
- They are **one of the most isolated tribes on Earth**.
- Most of them are uncontacted, refusing all interactions with outsiders.
- They are **semi-nomadic hunter-gatherers**, and their main sources of livelihood are hunting, gathering, fishing, and a little bit of horticultural activities in a rudimentary form.
- They **collect a wide variety of forest plants**, but their staple food is the pandanus fruit, which they call larop.
- **According to the Census (2011), the estimated population of Shompen is 229**.
- They **speak their own language**, which has many dialects. Members of one band do not understand the dialect of the other.
- They **have nuclear families** comprising husband, wife, and their unmarried children.
- The **family is controlled by the eldest male member**, who controls all activities of the women and kids.
- Monogamy is the general rule, although polygamy is allowed too.



ABOUT PVTGS:

- In India, tribal population makes up for **8.6% of the total population.**
- **PVTGs are more vulnerable among the tribal groups.** Due to this factor, more developed and assertive tribal groups take a major chunk of the tribal development funds because of which PVTGs need more funds directed for their development.
- In 1973, the **Dhebar Commission created Primitive Tribal Groups (PTGs)** as a separate category, who are less developed among the tribal groups.
- In 2006, the Government of India renamed the PTGs as **PVTGs (Particularly Vulnerable Tribal Groups).**
- In this context, in **1975**, the Government of India initiated to identify the most vulnerable tribal groups as a separate category called PVTGs and **declared 52 such groups**, while in **1993 an additional 23 groups were added** to the category, making it a **total of 75 PVTGs** out of 705 Scheduled Tribes.
- The **categorization is done by the Ministry of Home Affairs** and not by the Ministry of Tribal affairs.
- As per census 2001: There are 12 PVTGs having a population above 50,000.
- They generally inhabit remote localities having poor infrastructure and administrative support.
- The criteria followed for determination of PVTGs are as under:
 - A pre-agriculture level of technology.
 - A stagnant or declining population.
 - Extremely low literacy.
 - A subsistence level of economy.
- PVTGs have some basic characteristics - they are mostly homogenous, with a small population, relatively physically isolated, absence of written language, relatively simple technology and a slower rate of change etc.
- Among the **75** listed PVTG's **the highest number are found in Odisha.**



MOUNT RUANG VOLCANO

Why in News?

Indonesia's Mount Ruang volcano erupted for a second time in two weeks, spewing ash almost 2 kilometers (more than a mile) into the sky, closing an airport and peppering nearby villages with debris.

The volcano's activity prompted the Indonesian government to issue the highest-level alert in its four-tiered system. Tsunami warnings were issued due to potential hazards from the eruptions.

About Mount Ruang:

- Mount Ruang is the southernmost stratovolcano in the Sangihe Islands arc, North Sulawesi, Indonesia.
- Ruang Volcano towers at 725 meters (2,400 feet) high. Its summit reaches 10,932 feet above sea level and features a caldera approximately two miles wide.
- The top of the mountain is partially filled with a lava dome formed as a result of activity in 1904.
- Since then, volcanic activity has been observed with the formation of lava domes and pyroclastic flows.
- The island volcano is 4 by 5 kilometres (2.5 mi × 3.1 mi) wide.



About Strato volcano:

- Stratovolcanoes are tall, steep, and cone-shaped, differ from the flatter shield volcanoes by having higher peaks.
- They are primarily located above subduction zones and are a major part of extensive volcanically active areas like the Pacific Ring of Fire.

- **Stratovolcanoes account for about 60% of the Earth's individual volcanoes** and are mostly known for erupting andesite and dacite lavas.
- These allow gas pressures to build significantly and often leading to explosive eruptions.
- These volcanoes **typically consist of an equal mix of lava and pyroclastic material**. The layering of these materials is why they are also commonly referred to as composite volcanoes.
- Stratovolcanoes usually feature a small crater, which may be filled with water or ice, or contain a volcanic dome when the volcano is not actively erupting.



CHIPKO MOVEMENT

Why in News?

The **Chipko movement**, which originated in the 1970s in the Himalayan villages of Reni and Mandal, **marked its 50th anniversary recently.**

About Chipko Movement:

- The Chipko movement is a **forest conservation movement in India.**
- Opposed to commercial logging and the government's policies on deforestation, **protesters in the 1970s engaged in tree hugging**, wrapping their arms around trees so that they could not be felled.
- The Chipko movement was a **non-violent protest that began in the**



Chamoli district of Uttarakhand (then Uttar Pradesh), India, in 1973.

- It was **led by environmental activists such as Sundarlal Bahuguna and Gaura Devi**, among others, the movement aimed to prevent the felling of trees in the Himalayan region.
- The name **“Chipko” comes from the Hindi word meaning “embrace,” as villagers hugged the trees to prevent their cutting.**
- The original Chipko movement dates back to 1730 when Amrita Devi Bishnoi and over 300 others from the Bishnoi sect sacrificed their lives protesting the felling of Khejarli trees in Rajasthan).
- Its biggest victory was making people aware of their rights to forests, and how grassroots activism can influence policy-making regarding ecology and shared natural resources.
- It led to a ban on commercial felling of trees above 30 degrees slope and above 1,000 mean sea level in 1981.

CHITHIRAI FESTIVAL

Why in News?

Thousands of devotees witnessed Lord Kallazhagar entering the Vaigai river as part of the Chithirai festival.

About Chithirai Festival:

- The Meenakshi Tirukalyanam festival, also known as Chithirai Tiruviḷa or Meenakshi Kalyanam, is **an annual Tamil Hindu celebration in the city of Madurai** during the month of April.
- The festival, **celebrated during the Tamil month of Chithirai**, is associated with the Meenakshi Temple, dedicated to the goddess Meenakshi, a form of Parvati and



her consort Sundareshvara, a form of Shiva.

- The festival lasts for one month.
- The **first 15 days mark the celebrations of the coronation of Meenakshi** as the divine ruler of Madurai and her marriage to Sundareshvara.
- The **next 15 days mark the celebrations of the journey of Kallalagar or Alagar** (a form of the god Vishnu) **from his temple to Meenakshi Amman Temple in Madurai**.
- The Meenakshi festival was moved from the Tamil month of Masi to month of Chithirai by the king Tirumala Nayaka, giving the celebration its name, Chithirai Festival.
- The festival, merging narratives of Lord Kallazhagar and Goddess Meenakshi's marriage, holds historical significance and promotes harmony.



NEPTIS PHILYRA

Why in News?

A rare butterfly species named Neptis philyra, **commonly known as long-streak sailor**, has been **discovered for the first time in India in Tale Valley Wildlife Sanctuary** in Lower Subansiri district of **Arunachal Pradesh**, by a team of butterfly enthusiasts.

About Neptis Philyra:

- Neptis philyra is a **rare species of butterfly, commonly known as the long-streak sailor**.
- Till date, the butterfly species was known to be found across various regions of east Asia, including eastern Siberia, Korea, Japan, central and southwest China.



- The **butterfly has serrated wings** with rich brownish-black on the upper side and yellow-brown on the underside.
- The **butterfly's distinct markings include a white cell streak forming a "hockey stick"** pattern on the forewing.
- The species, which is part of the Nymphalidae family, is **known to prefer habitats such as evergreen forests, riverine vegetation, and rocky streams.**
- Tale Valley Wildlife Sanctuary is located near the Apatani cultural landscape in the Lower Subansiri District of Arunachal Pradesh.

About Talle Valley Wildlife Sanctuary:

- Talle Valley Wildlife Sanctuary is a **protected area in Arunachal Pradesh, India**, with an area of 337 km² (130 sq mi).
- It **was established in 1995.**
- It is **also known as Talley Valley Wildlife Sanctuary.**
- It ranges in elevation from 1,200 to 3,000 m (3,900 to 9,800 ft) and **harbours subtropical and temperate broadleaved and conifer forests.**
- Mammal species present include clouded leopard, Malayan giant squirrel, Indian muntjac, and Asian palm civet.
- The 130 bird species observed in spring 2015 included black, collared owlet, golden-breasted fulvetta, scarlet minivet, Verditer flycatcher and Mrs. Gould's sunbird.
- There are about 16 endangered plants that have survived in this area, they are: Panax sikkimensis, Schizandre, Acer hookeri, Acer oblongum, Goleola neediflora, Angioteris evecta, Cyathia spinulosa, Monotropa uniflora, Clematis apiculata, Corybus spp., Goleola falconeri, Balanphora dioica, Lilium grandiflora, Pleioblastu simonii, Berberis spp., Cotoneaster species.



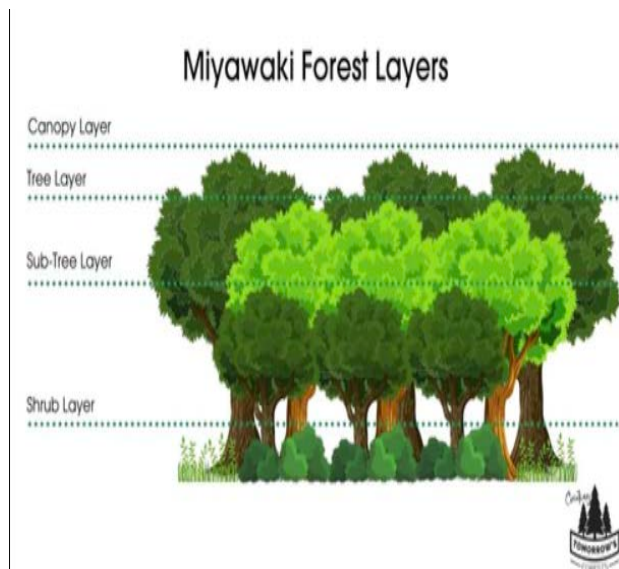
MILLION MIYAWAKI PROJECT

Why in News?

The **Embassy of Israel in India**, in collaboration with a non-profit entity, has **officially joined the 'Million Miyawaki' project**, a community-led initiative aimed at improving air quality in Indian cities through mass afforestation in tight urban spaces.

About:

- **Miyawaki is a technique developed by Japanese botanist Akira Miyawaki** in the 1980s.
- It **boosts greenery in compact spaces**.
- It involves planting two to four different types of indigenous trees within every square meter.
- It **fosters multi-layered forests with quick growth**, mimicking natural biodiversity.
- Though they lack some natural forest attributes like medicinal properties, **they serve as effective carbon sinks** and mitigate ecological damage from activities like mining.
- Under this project, **efforts are made at planting a million trees in Delhi-NCR** by creating 'forest-like' Miyawaki plantations of 600 trees each, with a **variety of up to 30 different locally sourced species** like Anjan, Amala, Bel, Arjun and Gunj (as part of Earth Day celebrations)



- This **method rapidly increases green cover on small plots** by promoting self-sustaining tree growth to full maturity within three years, eliminating the need for regular maintenance.
- The dense green cover of indigenous trees plays a key role in absorbing the dust particles of the area where the garden has been set up. The plants also help in regulating surface temperature.
- **Earth Day is celebrated on 22nd April every year** as an international event around the world to pledge support for environmental protection.

About Earth Day:

- **Earth Day is an annual event on April 22** to demonstrate support for environmental protection.
- It is a **globally recognised event** dedicated to raising awareness and promoting the sustainability of our planet.
- The **first World Earth Day was held on April 22, 1970**, in the United States.
- It was organized by a group of environmental activists led by US Senator Gaylord Nelson, who was concerned about the negative impact of industrialization and pollution on the environment.
- The **event was triggered by the 1969 Santa Barbara oil spill**, as well as other issues such as smog and polluted rivers.
- **In 2009, the United Nations designated 22nd April as 'International Mother Earth Day**.
- **Theme of 2024: 'Planet vs. Plastics'**
- This theme emphasizes the need for collective action to repair and heal the planet's ecosystems, combat climate change, and preserve biodiversity.
- **Earth Day is now globally coordinated by EARTHDAY.ORG**, which is a non-profit organization. It was formerly known as Earth Day Network.



- It aims to “build the world’s largest environmental movement to drive transformative change for people and the planet”.
- The landmark **Paris Agreement**, which brings almost 200 countries together in setting a common target to reduce global greenhouse emissions, **was also signed on Earth Day 2016.**

PULICAT BIRD SANCTUARY

Why in News?

The Tamil Nadu government is considering **denotifying a significant portion of the Pulicat bird sanctuary**, potentially excluding Patta land in 13 revenue villages from the sanctuary area.

About Pulicat Bird Sanctuary:

- Pulicat Lake Bird Sanctuary is a **sanctuary for birds**, 759 km² in area, located in the Tirupati district of **Andhra Pradesh** and a protected area of the Thiruvallur District of **Tamil Nadu, India.**
- Pulicat Lake is the **second largest brackish-water eco-system in India** after Chilka lake in Odisha.
- The sanctuary's international name is **Pulicat Lake Wildlife Sanctuary.**
- The sanctuary has many **greater flamingos.**
- It also **attracts many migratory birds** and also is a feeding and nesting ground for aquatic and terrestrial birds such as pelicans, storks, etc.
- It’s a popular birding spot in South India and is known for its greater flamingos, White Ibis, Grey Pelicans, Grey Herons, Open Billed Storks, Egrets, Spot Billed Ducks, Reef Herons, Painted Storks, Spoon Bills, and Cormorants.
- The biodiversity of this lake attracts hundreds of thousands of visitors per year.



- Pulicat Lake **may disappear within 100 years by being filled up with silt.**
- Efforts by government and private non-governmental organizations are working to halt lake destruction.

ASEAN FUTURE FORUM

Why in News?

India's External Affairs Minister, delivered remarks at the 1st ASEAN Future Forum.

About ASEAN FUTURE FORUM:

- ASEAN Future Forum is a **platform for ASEAN and its partners to share new ideas and policy recommendations.**
- This **forum aims to be an annual multi-stakeholder**, track 1.5 dialogue platform for open and constructive discussions about the future of ASEAN.
- It was **proposed by Vietnam at the 43rd ASEAN Summit in 2023.**
- It aims to contribute to promoting and shaping ASEAN's development path.
- **Theme of the First ASEAN Forum:** Toward fast and sustainable growth of a people-centered ASEAN Community.
- It **took place in Hanoi, Vietnam.**
- Its mission focuses on shaping a resilient, inclusive, and future-oriented ASEAN.
- This involves effectively adapting to the changing regional and global environment, while upholding core values and addressing the needs of its Member States.
- Critical questions about ASEAN's future relevance and centrality are addressed through this forum.



- **India supports ASEAN unity and centrality**, emphasizing the importance of a strong and unified ASEAN in the Indo-Pacific region.

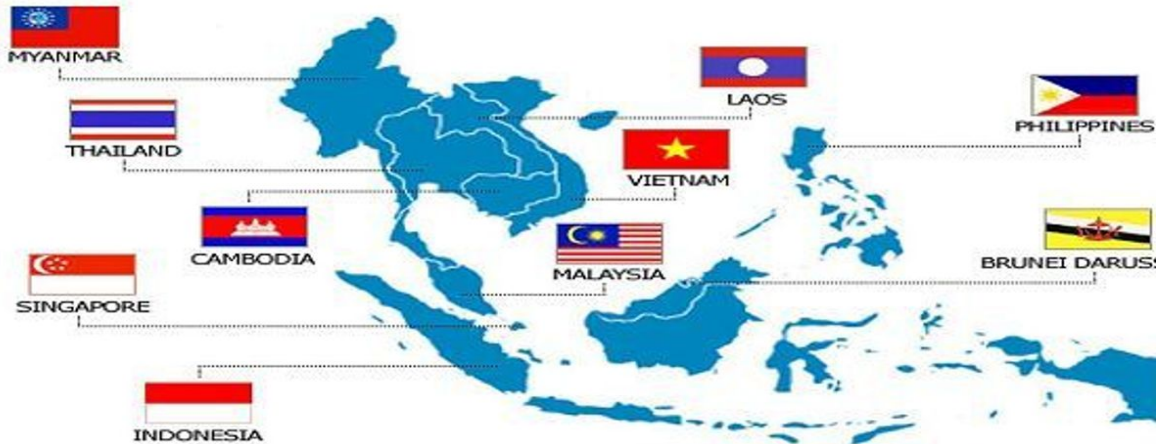
About ASEAN :

- ASEAN, an abbreviation for the **Association of Southeast Asian Nations**.
- It is a **political and economic union of 10 states in Southeast Asia**.
- Together, its member states represent a **population of over 600 million over a land area of 4.5 million km² (1.7 million sq mi)**
- ASEAN member states **include some of the fastest growing economies in the world**.
- The **primary objectives** as stated by the association are:
 - **To accelerate economic growth, social progress and cultural development in the region,**
 - **To promote regional peace and stability** through abiding respect for justice and the rule of law in the relationship among countries in the region and adherence to the principles of the United Nations Charter.
- **ASEAN engages with other supranational entities in the Asia-Pacific region** and beyond: it is a major partner of the UN, SCO, PA, GCC, MERCOSUR, CELAC, and ECO.
- **ASEAN, established on August 8, 1967**, initially consisted of five member states: **Indonesia, Malaysia, the Philippines, Singapore, and Thailand**.
- ASEAN's first summit meeting, held in Bali, Indonesia, in 1976.
- The organization's goal is to promote stability and economic growth across these nations.
- **In 2006, ASEAN was given observer status at the United Nations General Assembly**.
- The **ASEAN chair is a rotating position**, currently held by Indonesia; Laos is set to take over the chair in 2024
- **Member Countries: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam**.



- India is part of the ASEAN Plus Six grouping, which includes China, Japan, South Korea, New Zealand, and Australia.
- India and ASEAN signed a Free Trade Agreement in 2010 and have seen trade growth, except during the pandemic years of 2020 and 2021.

ASEAN Member Countries



KALESAR WILDLIFE SANCTUARY

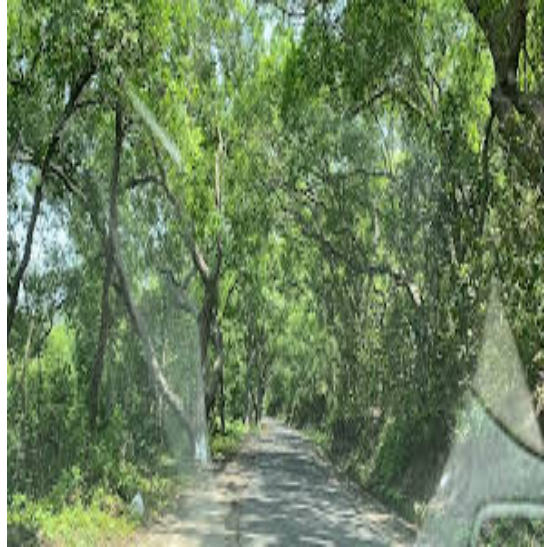
Why in News?

The Supreme Court has halted the construction of four dams inside Haryana's Kalesar Wildlife Sanctuary, citing concerns about the negative impact on wildlife and the ecosystem.

About Kalesar Wildlife Sanctuary:

- Kalesar Wildlife Sanctuary are **protected areas in Kalesar of Yamunanagar district of Haryana** state in India.
- It lies **within the Shivalik foothills of the Himalayas.**
- **Rajaji National Park**, situated in Uttarakhand, is **located to the northeast of this park.**

- It was established as a national park on December 8, 2003, it holds historical significance, having served as hunting grounds for Mughal and British rulers.
- The **sanctuary boasts the historic Kalesar Fort**, possibly constructed during Aurangzeb's reign.
- Its **name derives from the Kalesar forest and Kalesar Mahadev temple** situated within its bounds.
- The terrain ranges from plains to hills, reaching elevations of up to 700 meters, with narrow valleys known as "khols" scattered between the hills.
- Kalesar is a popular destination for leopards, panthers, elephants, red jungle fowl and bird-watching.
- **Once a prime tiger habitat**, the population dwindled in the late 19th century, leading to a hunting ban.
- It was **established in 1988 to protect the local wildlife and biodiversity** and was **declared a National Park on 8th December 2003**.
- The **majority of the forest is densely populated with tall sal trees**.
- Other trees that are found in the forest are Semul, Bahera, Amaltas, Shisham, Khair, Sain, Chhal and Jhingan.
- It is **home to many threatened animals** like leopards, Ghoral, Barking deer, Sambar, Chital, Python, King Cobra, Monitor lizard etc.



PARO STATEMENT

Why in News?

The **Sustainable Finance for Tiger Landscapes Conference**, held in Paro, Bhutan, concluded with the Paro Statement, committing to mobilize an additional \$1 billion over the next decade to conserve tigers and their landscapes.

Tiger Range Countries present included Bangladesh, Bhutan, Cambodia, China, India, Kazakhstan, Malaysia, Nepal, Thailand, and Vietnam.

Under the Royal Patronage of Her Majesty Queen Jetsun Pema Wangchuck, the conference was hosted by the Royal Government of Bhutan and supported by the Tiger Conservation Coalition.

About Sustainable Finance for Tiger Landscapes Conference:

- The two-day, The Sustainable Finance for Tiger Landscapes Conference, **conference was hosted by Bhutan** under the patronage of the country's Queen, Jetsun Pema Wangchuck.
- **Objectives** of the Conference:
 - Recognize Tigers as an indicator species and their potential to contribute to national and global biodiversity, climate, human well-being, sustainable development agendas and within global funding mechanisms.
 - Inspire collaboration and catalyze funding from the private and public sectors to contribute to sustainable financing for tigers and their landscapes through 2034.
 - Showcase successful approaches to sustainable financing for replication and scaling up.
 - Facilitate an exchange among key stakeholders to share and explore new funding streams.
 - Present conservation finance models from Representative Landscapes, based on evidence-based action plans and performance indicators, inspire the adoption of creative financing strategies to secure and recover tiger populations.



- It seeks to mobilise the amount of USD 1 billion over 10 years for the preservation of tiger landscapes.
- The conservation of tiger landscapes is vital to maintaining biodiversity, sequestering carbon, supplying resources to over 100 million people, and ensuring the overall health of the planet.
- The conference convened tiger range countries, visionary private and public sector donors, international development agencies, the Tiger Conservation Coalition, and other conservation organisations.
- **High-level representatives from ten tiger range countries delivered statements on the progress** and ambitions for conserving their tiger landscapes.
- The **conference culminated with the Paro Statement by the Royal Government of Bhutan** in partnership with the Tiger Conservation Coalition, inviting participants to join the shared commitment to mobilise an additional US\$1 billion to conserve tigers and tiger landscapes over the next ten years.
- In addition to securing and increasing the global tiger population, these funds will contribute to expanding tiger range, enhancing the ecological integrity and overall biodiversity of those areas while at the same time benefiting the local communities that share space with this species.
- The **Paro Statement illustrates a dedication to implementing innovative finance solutions, fostering international and public-private collaboration, and supporting national-level initiatives** that co-benefit tigers and people.
- This ambition was reflected in the conference proceedings, where numerous opportunities for sustainable financing that might be implemented or scaled in support of conservation efforts in tiger range countries were outlined.
- The UNDP presented one of these solutions in the Tiger Landscapes Investment Fund, a new blended financial mechanism under development that would catalyze nature-positive businesses with positive impacts on tigers, biodiversity, and people.
- The **Conference was the first step in a ten-year collaborative process towards securing sustainable financing for the conservation of tiger landscapes.**

DUBAI FLOODS

Why in News?

The UAE experienced the heaviest rainfall on record since 1949, with Dubai receiving over 142 millimeters of rain in just one night.

Recently a storm hit Oman and UAE, with UAE experiencing its heaviest rainfall in 75 years, raising questions about the role of cloud seeding in this unusual weather event.

About:

- UAE lies in the arid regions of the world, so such heavy rainfalls are unusual there.
- On average, Dubai experiences 94.7 mm of rain in a year.
- But this event was historic as it brought more than 142 mm of rainfall that had soaked Dubai over 24 hours.

Reasons for Dubai Floods:

- **Strong low pressure system** : A low-pressure system in the upper atmosphere, combined with low pressure at the surface, acted like a pressure “squeeze” on the air.
- **Heavy thunderstorm** : This intensified squeeze, along with the contrast between warmer ground-level temperatures and colder temperatures higher up, created the conditions for the powerful thunderstorm.
- **Storm System**: A significant storm system moved across the Arabian Peninsula, bringing unusually high rainfall to the region.
- **Climate change**: Rising global temperatures, driven by human-led climate change, are leading to more extreme weather events worldwide, including intense rainfall. Global warming may have contributed, as higher temperatures lead to increased water evaporation, allowing the atmosphere to hold more



moisture. The UAE has seen a temperature rise of almost 1.5 degrees Celsius over the last 60 years.

- **Mesoscale convective system:** It is a series of medium-sized thunderstorms caused by massive thunderclouds, formed as heat draws moisture up into the atmosphere which can create large amounts of rain.
- **Rapid urbanization** : In a recent study, Sharjah the capital of the third-largest emirate in the U.A.E., found that the city's rapid growth over the past half century had made it vulnerable to flooding at far lower levels of rain than before.
- **Cloud seeding** : There were speculations about cloud seeding contributing to the rainfall, however the meteorology department clarified that no cloud-seeding operations were dispatched before or during the turbulent weather episode.

BIOHACKING

Why in News?

The latest trend in biohacking has garnered widespread attention online, particularly after Bryan Johnson, the founder of KernelCo and Blueprint, announced his annual investment of \$2 million to reduce his biological age.

It is also gaining traction in India, with enthusiasts experimenting with various techniques like cryotherapy and IV therapy.

About Biohacking:

- Biohacking **involves manipulating biological systems using biology and technology** to improve health, enhance cognitive function, and conduct personal experiments.
- It **includes activities like self-tracking, DIY biology projects, and using substances like nootropics.**



- **Biohackers focus on optimising health** through methods like diet changes, supplements, and exercise, relying on personal experimentation and data tracking.
- There are **various categories** and mechanism for biohacking:
 1. **Age biohacking:**
 - Age biohacking particularly focuses on cellular senescence.
 - It is gaining popularity among individuals aged 35 to 50 who start experiencing signs of aging.
 - Many people are interested in maintaining cellular health and regeneration to mitigate aesthetic and bodily changes associated with aging.
 2. **Energy biohacking:**
 - This method focuses on conserving energy by prioritizing proper rest and sleep.
 - Stress relief practices also fit within this category.
 3. **Intertwining food and biohacking:**
 - Intertwining food and biohacking synergizes to enhance aspects like digestion, weight loss, and metabolic efficiency.
 - This approach capitalizes on individuals' understanding of managing what, how, and when to eat, facilitating optimization of dietary habits for better health outcomes.
 4. **Diet and nutrition biohacking:**

It include the consumption of supplements for blood sugar, continuous glucose monitors, use of metabolism monitoring devices, intermittent fasting practices etc.
- Biohacking is **popular among sports enthusiasts** seeking a performance edge.
- A recent study suggests that even a single high-intensity interval training (HIIT) session can enhance brain neuroplasticity, facilitating the rewiring or alteration of neural connections.
- This practice also encourages collaboration, knowledge sharing, and citizen science outside traditional institutions.
- **Biohacking is picking up in India especially in metro cities like Delhi and Mumbai.**
- Examples of biohacking include:

- **Dietary Modifications:** Following specific diets like ketogenic diet or intermittent fasting to enhance energy levels and metabolic health.
- **Supplementation:** Taking supplements such as vitamins, minerals, or nootropics to improve cognitive function, mood, or physical performance.
- **Physical Training:** Engaging in tailored exercise routines, including high-intensity interval training (HIIT) or strength training, to build strength, endurance, and resilience.
- **Sleep Optimization:** Employing techniques like sleep tracking, creating ideal sleep environments, or using sleep aids to enhance sleep quality and duration.
- **Mindfulness Practices:** Practicing meditation, deep breathing exercises, or mindfulness techniques to reduce stress, improve focus, and promote mental well-being.
- **Biometric Monitoring:** Using wearable devices or apps to track metrics such as heart rate variability, sleep patterns, and activity levels to gain insights into overall health and performance.
- **Biofeedback Devices:** Utilizing devices like neuro feedback or heart rate variability monitors to train the body's physiological responses and improve stress management and emotional regulation.
- However, **there are ethical, safety, and regulatory concerns**, such as the risks of self-experimentation and using unregulated substances.
- It is important to prioritise informed consent, privacy protection, and access to resources, as well as comply with health, safety, and environmental laws.
- Regulations status associated with biohacking in India:
 - Currently, India lacks specific regulations directly addressing biohacking.
 - While the **FSSAI introduced regulations for nutraceuticals in 2016** however their enforcement is uncertain.
 - The CDSCO has guidelines concerning the production and distribution of biological products like vaccines and gene therapies but these do not comprehensively address all biohacking practices.
- Despite the potential for personal empowerment and innovation, responsible behaviour, ethical considerations, and regulatory awareness are crucial in navigating the complexities and risks of biohacking.

PROJECT ISHAN

Why in News?

With the idea of **One Nation, One Airspace**, India has initiated Project ISHAN (Indian Single Sky Harmonized Air Traffic Management) at Nagpur.

This project **aims to enhance the capacity of the aviation industry** to handle the increasing domestic passenger numbers, which has been predicted to double by 2030.

About Project ISHAN:

- India has kickstarted the process of **unifying its four airspace regions under Project Indian Single Sky Harmonized Air Traffic Management at Nagpur (ISHAN).**
- It is an integration initiative which seeks to merge India's four Flight Information Regions (FIRs) in Delhi, Mumbai, Kolkata, and Chennai into one airspace around Nagpur.
- This initiative is **expected to enhance air traffic management, benefiting airlines and passengers** by making operations more efficient and safer.
- The aim behind the initiative is to reduce carbon footprint, enhance safety, and reduce aircraft fuel usage.
- It will help to streamline operations, enhance capacity, and alleviate congestion, efficient routing, and reduced flight times benefiting both airlines and passengers.
- A single flight information region (FIR) created as part of Project ISHAN would offer numerous advantages in terms of safety, efficiency, user satisfaction, reduced carbon footprint, and optimal manpower utilization.
- There are **several challenges in implementation** such as standardization of technology, process changes, and retraining of staff, revision of procedures, and formulation of new policies.
- A single continuum FIR would yield a lot of benefits in terms of safety, efficiency, user satisfaction, reduced carbon footprint and optimum manpower utilisation.



- This project will require uniform technology implementation, changes in the existing processes, retraining of air traffic control officers and policy formulation – all of which will require time and investment.

CLASSIC IAS ACADEMY