pravahini

BROUGHT TO YOU BY SUCCESS MANTRA

EDITION

OCTOBER' 2023

MONTHLY COMPENDIUM OF

CURRENT AFFAIRS

LIC SEBI

EASEVIDYA
Your Online Knowledge Mentor

Tata Motors awarded ₹766 crore in Singur case

- In a major victory for Tata Motors in the fight against West Bengal for canceling its Nano small car project, which forced the company to relocate the project to Sanand in Gujarat, a 3 member arbitration tribunal has made the final award of ₹765.78 crore to Tata Motors as per its claims.
- "In respect of the arbitration proceedings between Tata Motors Ltd [TML] and the West Bengal Industrial Development Corporation Ltd [WBIDC] in relation to TML's claim of compensation from WBIDC under various heads, on account of loss of capital investments, with regard to automobile manufacturing facility in Singur [West Bengal], this is to inform that the aforesaid pending arbitration proceedings before a 3 member arbitration tribunal has now been finally disposed of by a unanimous award dated October 30, 2023 in favour of TML whereas the claimant [TML] has been held to be entitled to recover from the respondent [WBIDC] a sum of ₹765.78 crore with interest thereon @11% per annum from September 1, 2016 till actual recovery thereof," the company said.

Researchers identify a new mushroom species from the Western Ghats

- A tiny, fragile looking mushroom sporting a honey yellow 'cap' found on the campus of the Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI) at Palode in Thiruvananthapuram has been identified as a new species.
- The discovery also gives fresh impetus to the study of the region's fungal diversity.
- Researchers at the JNTBGRI identified and described the new species as belonging to the genus Candolleomyces.
- The new species has been named Candolleomyces albo squamosus - 'albo squamosus' for the white wooly scale-like structures on its pileus or cap. Delicate in build, the mushroom grows to a height of just about 58 mm.
- 7 species of the genus Psathyrella reported earlier from India are now recognised as Candolleomyces.
- The discovery of a new species of the genus Candolleomyces in India is special given that there are only 35 species in this genus worldwide.

Q. How many of the above statements are correct?
   a. Some mushrooms have medicinal properties.
   b. Some mushrooms have psychoactive properties.
   c. Some mushrooms have insecticidal properties.
   d. Some mushrooms have bioluminescent properties.
   a) Only one   b) Only two   c) Only three   d) All four

Answer d)

Q. Consider the following statements:
   1. Commonly grown mushrooms have more than 90% of Protein and less than 1% of fat.
   2. Mushrooms have anti-oxidant as well as anti-cancer properties

   Which of the above statements is/are correct?
   a) 1 only   b) 2 only   c) Both 1 and 2   d) Neither 1 nor 2

Answer b)

Explanation- By fresh weight, the common commercially grown mushroom is more than 90% water, less than 3% protein, less than 5% carbohydrate, less than 1% fat, and about 1% mineral salts and vitamins.

Perhaps the more interesting properties of mushrooms are their non-nutritive plant substances—polysaccharides, indoles, polyphenols, and carotenoids in which cell and animal studies have shown antioxidant, anti-inflammatory, and anticancer effects.

Space-tech firm Skyroot raises $27.5 million to drive growth

- Space-tech company Skyroot Aerospace has raised $27.5 million (about ₹225 crore) in a pre-Series C funding round led by Singapore-based investment firm Temasek, confirming India's status as a rising private space-tech power.
- Co-founder and CEO of the Skyroot, Pawan Kumar Chandana.
- With the help of the new round of funding, the total funding into the company has risen to $95 million.
- Skyroot, founded in 2018 by Chandana and Naga Bharath Daka, came into prominence after launching India's and South Asia's first privately developed rocket. The company says it also offers on-demand, cost-effective, space launch services to global small and medium-sized satellite markets.

A Chinese vessel begins research off the coast of Sri Lanka amid India's concerns

- Chinese research vessel Shiyan 6, which arrived in Colombo amid concerns raised by India and the U.S., is set to begin its two-day research off the Sri Lankan coast.
- The research will be pursued off Sri Lanka's western coast, and in collaboration with Sri Lanka's National Aquatic Resources Research and Development Agency (NARA) and the University of Ruhuna.
- Geophysical research Research ship Shiyan 6 was added to China's fleet of marine research vessels in December 2020.
- Shiyan 6 China's first scientific research vessel focusing on geophysical exploration, is scheduled to operate at sea for about 80 days, with 13 research teams onboard pursuing 28 scientific research projects across 12,000 nautical miles.
- Both India and the U.S. raised concern over the vessel's visit, as the two countries had done in the past, around earlier visits of Chinese vessels.
- In September 2023, INS Delhi, India's first indigenously built destroyer undertook a goodwill visit to Sri Lanka.
- ROKS Gwanggaeto the Great of the Korean Navy and more recently, Japan Maritime Self-Defense Force (JMSDF) destroyer AKEBONO (DD 108) arrived at the Trincomalee harbor, located on Sri Lanka's north-eastern coast, on an official visit.

Verstappen creates history with 16th win of the season

- Red Bull's triple world champion Max Verstappen became the 1st Formula One driver to take 16 victories in a season when he won a crash-halted and action-packed Mexico City Grand Prix.
- The Dutch 26 year old also equalled French great Alain Prost's haul of 51 career wins with his 5th win in 6 editions of the Mexican race at the Autodromo Hermanos Rodriguez.
- Mercedes' Lewis Hamilton finished second, with fastest lap, and Ferrari's Charles Leclerc was third in a race red- flagged and restarted just before the halfway point when Haas's Kevin Magnussen crashed heavily.
- Verstappen's underpressure Mexican team mate Sergio Perez retired after colliding with pole sitter Leclerc as he tried to pass into the first corner.
- Only three drivers have won more races in the history of the sport and Verstappen could have passed Sebastian Vettel, next in his sights on 53, by the end of the season.

The IIT team finds carbon 'flowers' excelling at turning light to heat.
[Creation and properties of a novel carbon nanostructure called "carbon nano florets."]

- Researchers at IIT Bombay have synthesised particles that absorb 3 frequencies of sunlight and convert it to heat with an efficiency of 87%. These particles can be coated on surfaces to heat homes and sterilise surfaces in hospitals. The researchers have applied for a patent.
- Carbon nano florets were synthesized through a process involving the use of a material called dendritic fibrous nanosilica (DFNS) and acetylene gas in a chemical vapor deposition (CVD) technique.
- The researchers started with white DFNS (dendritic fibrous nanosilica) and subjected it to heat and acetylene gas in a furnace. This process turned the white material black, indicating the deposition of carbon on the DFNS. The white powder was then dissolved, leaving behind carbon particles.
- The resulting carbon nano florets were spherical nanostructures composed of carbon cones. These tiny structures resembled marigold flowers made entirely of carbon.
- The carbon nano florets exhibited an *exceptional ability to absorb sunlight at various frequencies, including infrared, visible light, and ultraviolet.* This broad absorption spectrum allows them to capture a significant amount of energy from the sun.
- The researchers demonstrated that the carbon *nano florets efficiently converted the absorbed light energy into thermal energy.* They achieved a remarkable solar-thermal conversion efficiency of 87%, which is among the highest reported for any material.
- The unique shape and properties of the carbon nano florets minimized heat dissipation to the environment, making them effective at retaining and utilizing the generated heat.
- The researchers found that a 1-square-meter coating of carbon nano florets on a surface could vaporize 5 liters of water in an hour, outperforming commercial solar stills. The nanoflorets have been patented, and there is interest in commercializing them for heating applications.
- The use of carbon nano florets for heating offers an environmentally friendly solution, as they can harness solar energy without the need to burn fossil fuels. This technology can be particularly useful in regions with abundant sunlight and low temperatures.

- The nanoflorets can be coated on various surfaces, such as paper, metal, and terracotta clay. The coating is stable and has a minimum lifetime of 8 years.
- Researchers are further exploring the physical and chemical properties of carbon nano florets and investigating their potential applications in diverse fields.
- "Carbon nano florets" represents a significant breakthrough in materials science, offering a highly efficient and sustainable means of harnessing solar energy for various practical applications.

MCQ

Q1. What is the efficiency of the carbon nano florets in converting sunlight into heat?

    a) 50%   b) 75%   c) 87%   d) 95%

Answer: c) 87%

Q2. What is the material used in the synthesis of carbon nano florets?

    a) Graphene   b) Dendritic fibrous nanosilica (DFNS)   c) Silicon   d) Glass fibers

Answer: b) Dendritic fibrous nanosilica (DFNS)

Q3. What frequencies of sunlight can the carbon nano florets absorb?

    a) Infrared only   b) Visible light only   c) Ultraviolet only   d) Infrared, visible light, and ultraviolet

Answer: d) Infrared, visible light, and ultraviolet

Q4. How are carbon nano florets produced from DFNS and acetylene gas?

    a) They are extracted directly from DFNS.

    b) DFNS is mixed with acetylene gas in a liquid solution.

    c) DFNS is subjected to heat and acetylene gas in a chemical vapor deposition (CVD) technique.

    d) DFNS is dissolved in acetylene gas.

Answer: c) DFNS is subjected to heat and acetylene gas in a chemical vapor deposition (CVD) technique.

Q5. What practical applications are mentioned for carbon nano florets?

    a) Heating homes and sterilizing surfaces in hospitals   b) Enhancing smartphone screens

    c) Generating electricity from sunlight   d) Purifying water

Answer: a) Heating homes and sterilizing surfaces in hospitals

Q6. What is the lifetime of the carbon nano florets coating on various surfaces?

    a) 2 years   b) 5 years   c) 8 years   d) 10 years

Answer: c) 8 years

Q7. How much water can a 1-square-meter coating of carbon nano florets vaporize in an hour?

    a) 1 liter   b) 3 liters   c) 5 liters   d) 7 liters

Answer: c) 5 liters

Q8. In what fields are researchers exploring the potential applications of carbon nano florets?

    a) Cooking and food preparation   b) Clothing and fashion

    c) Automotive engineering   d) Diverse fields

Answer: d) Diverse fields

An unfolding economic tragedy

[Issue of using GDP as the sole metric to gauge India's economic success and highlights several problems with this approach]

- A reflexive cheer of India as the fastest growing major economy rang out when the National Statistics Office (NSO) announced in late August that GDP had increased in the April--June quarter at an annual rate of 7.8%.
- The most euphoric cheerleaders predicted growth to accelerate to 8%.
- Even conservative forecasters routinely project GDP growth between 6% and 7%.
- This GDP- centric framing of alleged Indian economic success is wrong headed.

- GDP is a flawed metric of national economic welfare. It hides inequalities and deflects attention from acute job scarcity, poor education and health, unlivable cities, a broken judicial system, and environmental damage.
- GDP-Centric Focus: The excessive emphasis on GDP growth as a measure of India's economic success. GDP is a flawed metric that doesn't accurately reflect the overall well-being of the population, as it can hide inequalities and deflect attention from critical issues like job scarcity, education, healthcare, infrastructure, and environmental concerns.
- India's historical GDP growth patterns. India experienced rapid GDP growth in the mid-2000s due to high global trade and financial sector activities. However, this growth was unsustainable and slowed down significantly after the global financial crisis and various economic events, such as demonetization and the Goods and Services Tax (GST) rollout.
- A major factor contributing to India's economic slowdown is weak mass demand. Private corporate fixed investments decreased due to consumers' fear of job insecurity and limited purchasing power. Foreign demand for Indian goods was also constrained.
- India's economy has experienced fluctuations post-COVID, with significant drops in private corporate investments and a drop in savings rates for households. The overvalued rupee and stagnant world trade have negatively affected Indian exports.
- Government policies that focus on boosting the supply side of the economy, such as tax cuts and incentives, while neglecting to address the need for increased demand through job creation, human capital investment, and urban development. The reliance on indirect taxes is also seen as problematic as it erodes purchasing power.
- A more realistic medium-term annual GDP growth forecast for India is in the range of 3% to 4%.

Qualcomm's pivot into the Generative Artificial Intelligence market

- Qualcomm made a series of announcements that highlighted the chip maker's pivot to Generative Artificial Intelligence (gen AI).
- All the products it unveiled were aimed at supporting gen AI applications so mobile units can perform AI- based tasks on devices.

Generative Artificial Intelligence:

- GAI is a rapidly growing branch of AI that focuses on generating new content (such as images, audio, text, etc.) based on patterns and rules learned from data.
- The rise of GAI can be attributed to the development of advanced generative models, such as Generative Adversarial Networks (GANs) and Variational Autoencoders (VAEs).
- These models are trained on large amounts of data and are able to generate new outputs that are similar to the training data. For example, a GAN trained on images of faces can generate new, synthetic images of faces that look realistic.
- While GAI is often associated with ChatGPT and deep fakes, the technology was initially used to automate the repetitive processes used in digital image correction and digital audio correction.
- Arguably, because machine learning and deep learning are inherently focused on generative processes, they can be considered types of GAI, too.

Applications:

- Art and Creativity: It can be used to generate new works of art that are unique and innovative, helping artists and creatives explore new ideas and push the boundaries of traditional art forms.
- DeepDream Generator – An open-source platform that uses deep learning algorithms to create surrealistic, dream-like images.
- DALL·E2 – This AI model from OpenAI generates new images from text descriptions.
- Music: It can help musicians and music producers explore new sounds and styles, leading to more diverse and interesting music.
- Amper Music – creates musical tracks from pre-recorded samples.
- AIVA – uses AI algorithms to compose original music in various genres and styles.
- Computer Graphics: It can generate new 3D models, animations, and special effects, helping movie studios and game developers create more realistic and engaging experiences.

Healthcare:

- By generating new medical images and simulations, improving the accuracy and efficiency of medical diagnoses and treatments.

Manufacturing and Robotics:

- It can help optimize manufacturing processes, improving the efficiency and quality of these processes.

Significance for India:

- As per NASSCOM data, the overall AI employment in India is estimated at about 416,000 professionals.
- The growth rate for the sector is estimated at about 20-25%. Further, AI is expected to contribute an additional USD 957 billion to India's economy, by 2035.

Concerns Related to GAI:

- Accuracy: One of the biggest challenges is ensuring that the outputs generated by GAI are of high quality and accurate.
- This requires the development of advanced generative models that can accurately capture the patterns and rules learned from data.
- Partisan GAI Models: GAI models are trained on large amounts of data, and if that data is biased, the outputs generated by GAI may also be biased. This can lead to discrimination and reinforce existing societal biases.
- Privacy: Training GAI models requires access to large amounts of data, which could include personal and sensitive information.
- There is a risk that this data could be used for unethical purposes, such as for targeted advertising or for political manipulation.
- Responsibility: Since GAI models can generate new content, such as images, audio, or text it may be used to generate fake news or other malicious content, without knowing who is responsible for the output. This could lead to ethical dilemmas over responsibility.
- Automation and Lowering Job: GAI has the potential to automate many processes, which could lead to job displacement for people who are skilled in those areas.

Q1. Who is known as the -Father of AI"?

a) Fisher Ada   b) Alan Turing   c) John McCarthy   d) Allen Newell

Answer c). John McCarthy was not only known as the father of AI but also invented the term Artificial Intelligence.

Q2. A technique that was developed to determine whether a machine could or could not demonstrate the artificial intelligence known as the___

a) Boolean Algebra   b) Turing Test   c) Logarithm   d) Algorithm

Answer b). In 1950, mathematician and computing pioneer Alan Turing introduced a test to determine whether a machine can think like a human or not, which means it can demonstrate intelligence, known as the Turing Test. It was based on the "Imitation game" with some modifications. This technique is still a measure of various successful AI projects, with some updates.

Q3. What is the focus of Generative Artificial Intelligence (GAI)?

a) Enhancing natural language understanding
b) Generating new content based on learned patterns and rules from data
c) Developing advanced computer vision algorithms
d) Improving supervised learning models

Answer: b) Generating new content based on learned patterns and rules from data

Q4. Which of the following are advanced generative models used in GAI?

a) Linear regression models
b) Support Vector Machines (SVM)
c) Generative Adversarial Networks (GANs) and Variational Autoencoders (VAEs)
d) Decision trees

Answer: c) Generative Adversarial Networks (GANs) and Variational Autoencoders (VAEs)

Q5. Which of the following is an example of a GAI application in the field of music?

a) Photoshop   b) DeepDream Generator   c) Amper Music   d) Excel

Answer: c) Amper Music

Q6. What is the primary challenge in ensuring the accuracy of GAI outputs?

a) Availability of vast amounts of data   b) The speed at which GAI models generate content
c) The development of advanced generative models   d) The use of biased training data

Answer: c) The development of advanced generative models

Developed countries to overshoot carbon emissions goal, says study

- Developed countries responsible for 3/4th of existing carbon emissions will end up emitting 38% more carbon in 2030 than they have committed to, going by current trajectories, shows a study published by the Delhi- based think tank **Council for Energy Environment and Water (CEEW)**.
- The study, which comes ahead of the ***28th Conference of Parties (COP-28)*** of the UN Framework Convention on Climate Change to be held in **Dubai** in November and December, shows that 83% of this overshoot will be caused by the U.S., Russia, and the European Union.
- At COP-28, countries are expected to give an account of their Nationally Determined Contributions (NDCs), which are their commitments to the UN on emission cuts.
- The CEEW study noted that the NDCs of developed countries already fall short of the global average reduction of emissions to 43% below 2019 levels that is needed to keep temperatures from rising above 1.5 degrees Celsius.
- Instead, developed countries' collective NDCs only amount to a 36% cut.
- Collectively, developed countries were to reduce emissions by 5% from their 1990 levels between 2008 and 2012, and by 18% during 2013 to 2020.
- Several countries have committed to achieving net zero carbon emissions by 2050.
- To keep temperatures below 1.5 degrees Celsius, developed countries need to cut emissions to 43% below their 2019 level. However, the CEEW study found that based on their current emissions trajectories, their cuts would likely amount to only 11% by 2030.
- Except for two countries — Belarus and Norway — none of the developed countries seem to be on the path to meet their 2030 targets, though Japan and Kazakhstan are close, and are expected to miss their targets by only a single percentage point.

[India becomes No. 2 in World Cup wins]

- India surpassed New Zealand (58) with its 59th win to become the second most successful team in the ODI World Cups, only behind Australia (73 wins).
- England equalled Australia (from 1992) for the most defeats by a defending champion in a World Cup edition with its fourth loss in six games.
- Virat Kohli (32nd innings), Joe Root (22nd innings) and Ben Stokes (14th innings) recorded their first World Cup ducks in the match.
- Kohli also equalled Tendulkar (34) for ***most ducks*** while batting in the top seven in international cricket.
- Rohit Sharma became the 5th Indian to complete 18000 international runs behind Tendulkar, Kohli, Rahul Dravid and Sourav Ganguly.
- Rohit Sharma completed 1000 ODI runs in 2023, the third player to reach the mark behind Shubman Gill and Pathum Nissanka.

[Electoral Bonds case]

- The Supreme Court named the 5 judges on the Constitution Bench scheduled to hear petitions challenging the legality of the Electoral Bonds scheme, which facilitates anonymous donations to political parties, from October 31.
- Chief Justice of India D.Y. Chandrachud will head the Bench with Justices Sanjiv Khanna, B.R. Gavai, J.B. Pardiwala and Manoj Misra.
- The case has been pending in the top court for over 8 years now.
- Advocate Prashant Bhushan, for petitioner NGO Association for Democratic Reforms, had pressed the court to hear the electoral bonds issue before the general elections in 2024.
- The court has agreed to the petitioners' prayer calling for focus primarily on two issues concerning the electoral bonds scheme — the legalisation of anonymous donations to political parties and the violation of citizens' right to information about the funding of political parties, promoting corruption.
- The two issues concern violation of Articles 19, 14 and 21 of the Constitution.
- The case involves a batch of petitions challenging the amendments introduced by the Finance Act 2017 paving the way for the anonymous electoral bonds scheme. Earlier, CJI Chandrachud had agreed to hear the petitions -which were filed in 2017- after the petitioners urged that the matter be heard before the upcoming general elections.
- The Finance Act 2017 introduced amendments in the Reserve Bank of India Act, Companies Act, Income Tax Act, Representation of Peoples Act and Foreign Contributions Regulations Act to make way for the electoral bonds.

- By virtue of the 2017 amendment made to Section 29 C of the Representation of Peoples Act 1951(RPA), a donor may buy an electoral bond at specified banks and branches using electronic modes of payment and after having completed the KYC (know your customer) requirements.
- However, political parties are not required to disclose the source of these bonds to the Election Commission of India (ECI). The bonds can be bought for any value, in multiples of Rs 1,000, Rs 10,000, Rs 1 lakh, Rs 10 lakh or Rs 1 crore. The name of the donor will not be there in the bond. The bond will be valid for 15 days from the date of issue, within which it has to be encashed by the payee-political party. The face value of the bonds shall be counted as income by way of voluntary contributions received by an eligible political party, for the purpose of exemption from Income-tax under Section 13A of the Income Tax Act, 1961.
- The petitions have been filed by political party Communist Party of India (Marxist), and NGOs Common Cause and Association for Democratic Reforms (ADR), which challenge the scheme as "an obscure funding system which is unchecked by any authority". The petitioners voiced the apprehension that the amendments to Companies Act 2013 will lead to "private corporate interests taking precedence over the needs and rights of the people of the State in policy considerations".
- In 2021, the Supreme Court had refused to stay the release of electoral bonds ahead of the assembly elections in certain States.

MCQ

Q1. Which NGO is one of the petitioners challenging the Electoral Bonds scheme?
   a) Communist Party of India (Marxist)   b) Common Cause
   c) Reserve Bank of India   d) Election Commission of India

Answer: b) Common Cause

Q2. What are the two main issues the Supreme Court is focused on in the case?
   a) Legalization of anonymous donations and voter rights   b) Voter registration and campaign financing
   c) Legalization of anonymous donations and right to information   d) Political advertising and campaign funding

Answer: c) Legalization of anonymous donations and right to information

Q3. According to the Finance Act 2017, what is the key feature of the Electoral Bonds scheme?
   a) Political parties must disclose the source of the bonds.   b) Donors can purchase bonds anonymously.
   c) Bonds can only be bought with cash.   d) Bonds have a validity of 5 years.

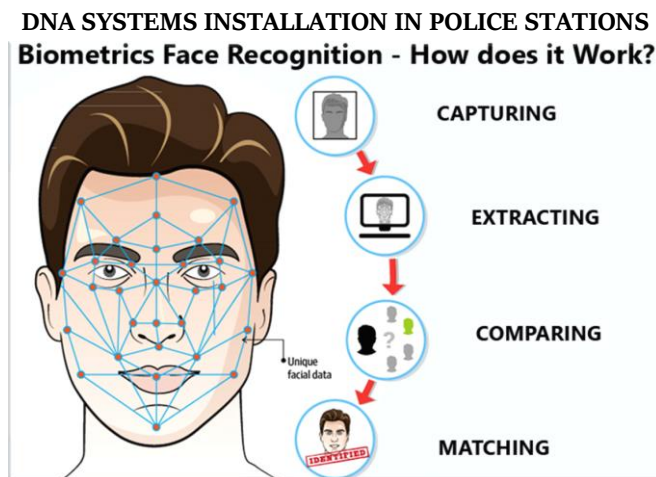Answer: b) Donors can purchase bonds anonymously.

Bangladesh is building a memorial to honour Indian heroes of 1971 war .

- A memorial to honour the Indian soldiers who sacrificed their lives in the Liberation War of Bangladesh in 1971 at Ashuganj in Bangladesh is in the advanced stages of completion.
- It will have the names of around 1,600 Indian soldiers inscribed on it. It is expected to be ready by December.
- This will be the first memorial in Bangladesh to exclusively honour Indian soldiers from the 1971 war.
- The foundation stone for the memorial at Ashuganj, Brahmanbaria was laid by Prime Minister Narendra Modi and Bangladesh Prime Minister Sheikh Hasina in March 2021.
- All the names of the Indian soldiers martyred will be engraved so that everybody can know who these people who sacrificed for our emancipation.

IITM Pune demonstrates cloud seeding can produce rainfall

- Experiment conducted in Solapur city, which aimed to enhance rainfall in a region with low precipitation.
- Solapur city experiences low rainfall due to its location on the leeward side of the Western Ghats.
- The experiment, known as the *"Cloud Aerosol Interaction and Precipitation Enhancement Experiment (CAIPEEX) phase-4,"* took place during the summer monsoon period of 2018 and 2019.
- The primary goal of the experiment was to investigate the effectiveness of hygroscopic cloud seeding in deep convective clouds and to develop a cloud seeding protocol.
- The experiment used two aircraft to study various cloud parameters and to seed the clouds with calcium chloride flares at the base of warm convective clouds during their growing stage.
- The study found that cloud seeding was effective in enhancing rainfall, with a relative enhancement of 18%, equivalent to approximately 8.67 mm more rainfall. This amounted to a total enhancement of 867 million liters of water availability.

- The experiment included both seeded and unseeded convective clouds (150 seeded and 122 unseeded) to study the effectiveness of cloud seeding.
- The decision to seed clouds was based on criteria such as liquid water content, vertical motion in the cloud, and other characteristics that indicated the potential for rain.
- The study estimated the cost-benefit ratio of cloud seeding, which was approximately 18 paisa (Indian subunit of currency) per liter of water produced. The cost could decrease significantly if indigenous seeding aircraft were used.
- While cloud seeding alone cannot completely mitigate droughts, it can increase rainfall by 18% and partially address water requirements. Implementing cloud seeding as catchment-scale projects may help in drought management.
- The two-year study not only provided insights into cloud microphysics and characteristics but also developed a high-resolution numerical model to guide stakeholders in identifying target locations, suitable clouds for seeding, and seeding strategies.
- Not all cumulus clouds respond to cloud seeding, and the effectiveness of cloud seeding depends on the microphysics of the clouds. The study found that around 20-25% of cumulus clouds produce rainfall when seeded correctly.
- In regions like Solapur, where water supply is limited (once every three days), cloud seeding can be highly beneficial by providing additional water resources.
- This experiment demonstrates the potential for cloud seeding as a strategy to enhance rainfall in areas with water scarcity, but its success depends on various factors and the specific conditions of the targeted clouds.

DNA SYSTEMS INSTALLATION IN POLICE STATIONS

In April 2022, the Criminal Procedure (Identification) Act (CrPI) was passed by Parliament. The Act enables police and central investigating agencies to **_collect, store and analyse physical and biological samples including retina and iris scans of arrested persons._** The rules that would govern the Act were notified in September 2022. However, the Act is yet to be implemented fully as the National Crime Records Bureau (NCRB), the nodal agency, is still preparing the guidelines and Standard Operating Procedure (SOP) to implement the legislation. The NCRB operates under the Union Ministry of Home Affairs (MHA). Though the Act and rules do not distinctly mention collection of DNA samples and face-matching procedures, in subsequent meetings with State police officials, the NCRB has said that these measures will be rolled out in around 1,300 locations across the country.

The _CrPI Act repealed the Britishers Identification of Prisoners Act, 1920_ whose scope was _limited to_ collecting and _recording finger impressions, footprint impressions and photographs of certain categories of convicted persons and impressions of non convicted persons on the orders of a Magistrate._

The **NCRB** will prescribe the specifications of the equipment or devices to be used for taking measurements in digital and physical format, the method of handling and storing measurements by the State police in a format compatible with the NCRB database and also the information technology system to be used for taking the measurements.

Police and prison officials have been authorised to take measurements and the Act expanded the scope to also allow any person skilled in taking the measurements or a registered medical practitioner or any person authorised to take such measurements. The records are to be stored for 75 years.

Police across States have been trained to record finger impressions through the National Automated Fingerprint Identification System (NAFIS). However, several police officials said the iris scanners and devices that would enable capturing of DNA and facial recognition systems are yet to be provided. NAFIS, also under the NCRB, is a separate project that was launched in 2022. It assigns a unique ten digit National Fingerprint Number (NFN) to all suspects arrested by the police.

The rule states that unless a person is booked under prohibitory and preventive sections that are clubbed with other serious criminal charges, the measurements will not be stored in the system. It takes the onus of destruction and disposal of

records of an individual from the central database in case a person has been falsely implicated in a crime or has been acquitted by the court.

The provision should be read in terms of the Right to be Forgotten and should not be at the mere discretion of the Nodal Officer." The type of DNA samples that could be collected by the police have not been defined yet.

In meetings with the States, the NCRB has cautioned against the misuse of the database by ensuring identification and deployment of appropriate safeguards allowing only designated officials to access the data in real time.

Q1. What did the CrPI Act replace, and what additional measures does it introduce?
   a) It replaced the Britishers Identification of Prisoners Act, 1920 and introduced a system for collecting and recording only finger impressions.
   b) It replaced the Britishers Identification of Prisoners Act, 1920 and introduced measures for collecting DNA samples and implementing facial recognition systems.
   c) It introduced the Britishers Identification of Prisoners Act, 1920 and expanded its scope to include all criminal charges.
   d) It replaced the Britishers Identification of Prisoners Act, 1920 and introduced a system for collecting DNA samples only.

Answer: b) It replaced the Britishers Identification of Prisoners Act, 1920 and introduced measures for collecting DNA samples and implementing facial recognition systems.

Q2. How long will the records collected under the CrPI Act be stored?
   a) 5 years   b) 25 years   c) 50 years   d) 75 years
Answer: d) 75 years

Q3. Which agency is responsible for implementing the CrPI Act, and who is authorized to take the measurements?
   a) The National Automated Fingerprint Identification System (NAFIS) and any person skilled in taking measurements.
   b) The National Crime Records Bureau (NCRB) and any person skilled in taking measurements or a registered medical practitioner.
   c) The Ministry of Home Affairs (MHA) and only police and prison officials.
   d) The Nodal Officer and only designated officials.

Answer: b) The National Crime Records Bureau (NCRB) and any person skilled in taking measurements or a registered medical practitioner.

Q4. What is the purpose of the National Automated Fingerprint Identification System (NAFIS)?
   a) To collect and store DNA samples of arrested persons
   b) To assign unique identification numbers to all suspects arrested by the police
   c) To monitor and control the use of the CrPI Act database
   d) To provide iris scanners and facial recognition devices to police officials

Answer: b) To assign unique identification numbers to all suspects arrested by the police.

Q5. Q. The identity platform 'Aadhaar' provides open "Application Programming Interfaces (APIs)". What does it imply?
   1. It can be integrated into any electronic device.
   2. Online authentication using iris is possible.
   3. Which of the statements given above is/are correct?
   a) 1 only   b) 2 only   c) Both 1 and 2   d) Neither 1 nor 2
Ans: (c)

Q6. In addition to fingerprint scanning, which of the following can be used in the biometric identification of a person?
   1. Iris scanning
   2. Retinal scanning
   3. Voice recognition
   Select the correct answer using the code given below:
   a) 1 only   b) 2 and 3 only   c) 1 and 3 only   d) 1, 2 and 3
Ans: (d)

Panel holds back its report on crime Bills

- The Parliamentary Standing Committee on Home Affairs postponed its adoption of a draft report on 3 Bills seeking to replace the existing criminal laws, after pressure from the Opposition parties seeking more time to examine it.
- 3 members — Congress MPs Adhir Ranjan Chowdhury and Digivijay Singh, along with Dravida Munnetra Kazhagam MP N.R. Elango — have so far filed dissent notes. They are demanding several changes in the Bharatiya Nyaya Sanhita, 2023 that will replace the Indian Penal Code, and the Bharatiya Nagarik Suraksha Sanhita, 2023 that will replace the Criminal Procedure Code (CrPC).
- The panel's report states that since the text of the Bill is in English it does not violate provisions of Article 348 of the Constitution.
- The panel's draft report has accepted a host of suggestions on the Bharatiya Sakshya, 2023, that is meant to replace the Indian Evidence Act; there is unanimity on that portion of the draft report.
- Parliamentary Standing Committee on Home Affairs, headed by BJP MP Brij Lal, has recommended bringing back the adultery law and adding a gender-neutral provision to it, as well as criminalising non-consensual sex between men, women or trans persons.
- In the bill that seeks to amend the Indian Penal Code (IPC), Members of Parliament (MPs) are recommending the re-criminalisation of adultery (Section 497 of the IPC), which had been decriminalised by the Supreme Court in 2018. The proposed amendment also includes the introduction of a gender-neutral provision.

[Mizoram has highest cancer incidence rate in India: The Lancet Regional Health — Southeast Asia.]

Findings of the Study

- The Study was titled , *"Awareness, diagnosis and treatment needs in Mizoram, India: evidence from 18 years trends (2003-2020)"* published in **The Lancet Regional Health South-east Asia.**
- An 18-year trend study reveals increasing cancer incidence and mortality in Mizoram.
- Stomach cancer is the leading cause of cancer-related deaths among men, while lung cancer plays a similar role among women.
- The younger generation is also experiencing a rise in cancer cases, potentially linked to static lifestyles and dietary habits prevalent in the tribal population.A genetic predisposition may be contributing to this trend.
- Escalating mortality rates may be due to a lack of:
  - Specialized diagnostic facilities,
  - Skilled human resources,
  - Genomic research-guided treatment strategies, and
  - Transportation challenges in the region.

Cancer in India

- According to the World Health Organization (WHO), cancer is defined as a group of diseases characterized by the uncontrolled growth and spread of abnormal cells in the body.
- These abnormal cells can form tumors or invade surrounding tissues and organs, causing various health problems.
- Over the past decade, the average annual incidence of cancer in India has risen from around 10 lakh in 2012 to 14.6 lakh in 2022.
- One in nine people are likely to develop cancer in his/her lifetime.
- Lung and breast cancers were the leading sites of cancer in males and females, respectively.

India's initiatives for Against Cancer

- National Cancer Registry Programme (NCRP) – for systematic collection of data on cancer.
- National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke (NPCDCS), etc.

MCQ

Q1. According to the study, what is the leading cause of cancer-related deaths among men in Mizoram?

    a) Lung cancer   b) Breast cancer   c) Stomach cancer   d) Genomic research-guided treatment

Answer: C) Stomach cancer

Q2. In India, what is the average annual incidence of cancer as of 2022, according to the World Health Organization (WHO)?

    a) 5 lakh   b) 10 lakh   c) 14.6 lakh   d) 20 lakh

Answer: C) 14.6 lakh

Q3. What is the purpose of the National Cancer Registry Programme (NCRP) in India?

    a) To provide cancer treatment to patients

    b) To promote genetic research in cancer

    c) To collect systematic data on cancer

    d) To control dietary habits in the population

Answer: C) To collect systematic data on cancer

Q4. Which national program in India focuses on the prevention and control of cancer, diabetes, cardiovascular diseases, and stroke?

    A) National Cancer Registry Programme (NCRP)

    B) National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke (NPCDCS)

    C) National Initiative for Cancer Care

    D) National Genomic Research Program

Answer: B) National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke (NPCDCS)

[Qatar hands death penalty to 8 former Indian Navy men]

Qatar on Thursday (Oct 27) surprised New Delhi by sentencing eight Indian nationals to death after a court found them guilty of spying.

- The 8 men were working for a Qatari firm Dahra Global, which was linked to the Qatari military and reportedly advising it on a top-secret submarine programme.
- The Qatari intelligence accused these 8 Indians of passing on secret data to other nations and subsequently detained them in August last year.
- Reportedly, the owner of the firm, a retired member of the Royal Omani Air Force, was also arrested by Qatar along with the 8 men but was released in November 2022.
- The arrested Indian were identified as Captain Navtej Singh Gill, Captain Birendra Kumar Verma, Captain Saurabh Vasisht, Commander Amit Nagpal, Commander Purnendu Tiwari, Commander Sugunakar Pakala, Commander Sanjeev Gupta and Sailor Ragesh – all ex-Indian Navy, employed by Dahra Global.
- The Ministry of External Affairs expressed that the death sentence to 8 Indians reportedly accused of espionage is "deeply shocking".
- The trial was shrouded in secrecy, with scant information on the charges and evidence against the former Indian Navy servicemen, arrested in August 2022. Despite pleas from their families and Indian diplomats in Doha, Qatar has not explained why it has not divulged details of the case. Even the judgment has yet to be shared with New Delhi.
- Leaked reports suggest that the men have been accused of sharing secret information pertaining to the stealth submarine programme they worked on, with a third country, a charge their families have denied.
- Apart from strategic and defence cooperation agreements, India sources 40% of its LNG needs from Qatar. India is also Qatar's third biggest source of imports, particularly raw materials for construction and fresh food items. Pertinently, these supplies continued despite the Gulf blockade against Qatar in 2017, which should have counted for some goodwill towards India.
- In addition, 7,00,000 Indian expatriates are an integral part of Qatar's institutions, industry and workforce.

[SC allows surrogacy, strikes down rule banning use of donor gametes]
[Arun Muthivel vs Union of India and ors]

A complete ban on using donor gametes (eggs or sperm) in gestational surrogacies is against the Rules under the Surrogacy Act, the Supreme Court recently observed.

- The Supreme Court has protected the right of parenthood of a woman, suffering from a rare medical condition, by staying the operation of a law which threatened to wreck her hopes to become a mother through surrogacy.
- The woman has Mayer Rokitansky Kuster Hauser syndrome. Medical board records showed she has "absent ovaries and absent uterus, hence she cannot produce her own eggs/ oocytes'.
- The couple had begun the process of gestational surrogacy on December 7, 2022. However, a government notification on March 14, 2023 amended the law, banning the use of donor gametes. It said "intending couples" must use their own gametes for surrogacy.
- The petition was filed in the Supreme Court challenging the amendment as a violation of a woman's right to parenthood.
- Bench of Justices B.V. Nagarathna and Ujjal Bhuyan held *"The amendment which is now coming in the way of the intending couple and preventing them from achieving parenthood through surrogacy, we find, is, prima facie contrary to what is intended under the main provisions of the Surrogacy Act both in form as well as in substance."*

- The petitioner's lawyer argued that the amended *Paragraph 1(d) of the Surrogacy (Regulation) Rules, 2022*, by ruling out the use of donor eggs, had made it impossible for his client and her husband to continue with the process of surrogacy to achieve parenthood. He argued that the 2023 amendment *contradicted Sections 2(r) and 4 of the Surrogacy Act, 2021,* which recognised the situation when a medical condition would require a couple to opt for gestational surrogacy in order to become parents.
- Petitioner referred to *Rule 14(a) of the Surrogacy Rules* which listed the medical or congenital conditions owing to which a woman could choose to become a mother through gestational surrogacy. They included "having no uterus or missing uterus or abnormal uterus (like hypoplastic uterus or intrauterine adhesions or thin endometrium or small unicornuate uterus, T-shaped uterus) or if the uterus is surgically removed due to any medical condition such as gynecological cancer". **'Woman's choice'**
- The Court agreed with Petitioner that the law permitting gestational surrogacy was "womancentric". The decision to have a surrogate child was entirely based on the woman's inability to become a mother owing to her medical or congenital condition. Such a condition included the "absence of a uterus or repeatedly failed pregnancies, multiple pregnancies or an illness which makes it impossible for her to carry a pregnancy to term or would make the pregnancy life threatening".
- The court further held that **amendment *cannot contradict Rule 14(a)*** which specifically recognises the absence of a uterus or any allied condition as a medical indication necessitating gestational surrogacy.

Q1. which of the following sections limits the right to avail surrogacy to Indian widows or female divorcees between the ages of 35 and 45.
 a) Section 2(1)(s) of the Surrogacy Act
 b) Section 2(1)(c) of the Surrogacy Act
 c) Section 3(2)(s) of the Surrogacy Act
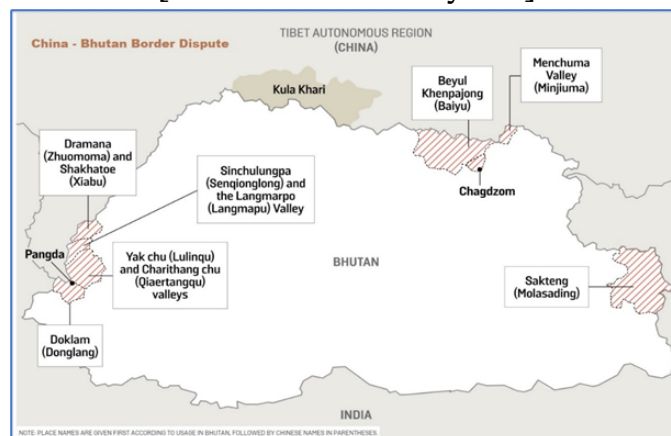 d) Section 3(1)(s) of the Surrogacy Act
Answer: a. Section 2(1)(s) of the Surrogacy Act

Q2. Surrogacy (Regulation) Act, 2021 also bans commercial surrogacy, which is punishable with a jail term of:
 a) 5 years and a fine up to Rs. 10 lakhs.
 b) 10 years and a fine of up to Rs 10 lakhs.
 c) 5 years and a fine of up to Rs 20 lakhs.
 d) 7 years and a fine of up to Rs 10 lakhs.
Answer: b. 10 years and a fine of up to Rs 10 lakhs.

[China--Bhutan boundary talks]

China and Bhutan held their 25th round of boundary talks in Beijing and signed a Cooperation Agreement on the "Responsibilities and Functions of the Joint Technical Team (JTT) on the Delimitation and Demarcation of the Bhutan--China Boundary."

- This advances their 3- Step Roadmap initiated in 2021 for border resolution, building on the positive momentum since their last talks in 2016.
- The Boundary talks between Bhutan and China were held after a gap of 7 years and indicate significant progress has been made.
- Bhutan and the Tibetan Autonomous Region share a contiguous border to Bhutan's north and west. Since 1984, Bhutan and China had held 24 rounds of talks to resolve the disputes until 2016, but the 25th round appeared to have been held after the Doklam Standoff between Indian and Chinese armies in 2017, and then the COVID-19 pandemic in 2019--2021.
- However, the two sides used the pause to hold talks at other levels in rapid succession, especially after China threatened to open a new front for a border dispute to Bhutan's east.

- Since then, the Expert Group of diplomats on both sides met in 2021 to agree on a 3 -step roadmap, and the first boundary delimitation technical talks were held in August 2023.
- The 3-Step roadmap MoU signed by the Bhutanese Foreign Minister and Chinese Assistant Foreign Minister in 2021. The **3-Step Roadmap** involves **first, agreeing to the border "on the table"**; then **visiting the sites on the ground**; and then **formally demarcating the boundary.**
- Bhutan and China don't have diplomatic ties, as Bhutan has traditionally avoided diplomatic relations with all the United Nations Security Council permanent members.
- For India, given the breakdown in its ties with China over the standoff at the Line of Actual Control from 2020, any hint of closer ties between China and one of its closest neighbours is a cause for worry.
- More specifically, New Delhi is watching the demarcation discussions over Doklam, as amongst the proposals China has placed on the table is an agreement to "swap" areas in Doklam under Bhutanese control with areas in Jakarlung and Pasamlung which China claims.
- The Doklam trijunction cuts very close to India's Siliguri corridor, a narrow area that connects the North Eastern States to the rest of India and India would not like to see China gain access to any area closer to it.
- Since the Doklam standoff in 2017, China has doubled down on its control of the Doklam plateau, and according to a recent Pentagon report, has continued to build "underground storage facilities, new roads, and new villages in disputed areas in neighbouring Bhutan," erasing many of the strategic gains that New Delhi had hoped for after China agreed to step back from the standoff point in 2017.
- Finally, India's worry is over China's demand for full diplomatic relations with Bhutan, and opening an Embassy in Thimphu. Given India's challenges with Chinese projects and funding in other neighbouring countries including Bangladesh, Nepal, Sri Lanka and the Maldives, any Chinese presence in a small country like Bhutan would be problematic. However, Bhutan's leadership has thus far said that all decisions would consider India's interests and that it has always consulted India on issues of concern.

MCQ

Q1. What is the region where China and Bhutan have been engaged in boundary negotiations often referred to?
   a) Doklam Plateau   b) Mount Everest   c) Ganges Basin   d) Thar Desert
Answer: A) Doklam Plateau

Q2. What international treaty or agreement has been a key point of discussion in the China-Bhutan boundary talks?
   a) Treaty of Tordesillas   b) Simla Agreement   c) Treaty of Versailles   d) Treaty of Utrecht
Answer: B) Simla Agreement

Q3.Which river valley has been a significant focus of the boundary discussions between China and Bhutan?
   a) Brahmaputra   b) Mekong   c) Yangtze   d) Yellow River
Answer: A) Brahmaputra

Q4.What is the disputed area that has been a major point of contention in the China-Bhutan boundary talks?
A) Aksai Chin
B) Siachen Glacier
C) Chumbi Valley
D) Kargil
Answer: C) Chumbi Valley

India's green hydrogen move may worsen pollution if steps are not in place: study by Climate Risk Horizons (CRH)

- India's plans to produce so called 'green hydrogen' — where the gas is produced without resulting in fossil fuel emissions — may end up worsening pollution if proper checks and balances are not in place, according to a study by environmental and energy think tank, Climate Risk Horizons (CRH).
- The National Green Hydrogen Mission, piloted by the Ministry of New and Renewable Energy (MNRE), expects to manufacture 5 million tonnes by 2030.
  - This would require the installation of renewable energy capacity worth 125 GW and the use of 250,000 gigawatt hour units of power, equivalent to about 13% of India's present electricity generation.
  - As of August 2023, India's total renewable energy (RE) capacity stood at 131 GW.

- The 2030 green hydrogen plan thus envisages adding an equivalent RE capacity by 2030. This is over and above the 500 GW of RE capacity that India has committed to install by 2030 as part of the Paris Agreement.
- To put that in perspective, India installed only 15 GW of new solar and wind capacity in 2023, against the 45 GW per year needed to reach the 2030 target.
- The MNRE has defined Green Hydrogen as hydrogen produced in a way that emits no more than 2 kg of carbon dioxide per kg of such hydrogen. Currently, producing 1 kg of 'grey hydrogen', as it is known, ends up emitting 9 kg of carbon dioxide.
- The **main concern is that if electrolysers were run 24x7, they would be expected to operate even at night when no solar power is available.** "Where will the electricity come from? *If it comes from India's coal powered grid in general, it will in fact increase carbon emissions, since about 70% of the electricity on the grid is coal generated*.
- The vast majority of projects have not disclosed their source of electricity. It is also not clear if those few projects that have committed...to meet 100% of their requirement from these sources.

[Unhealthy urban India must get into street fight mode]

- India's urban population is estimated to reach 675 million in 2035, the second highest in the world.
- Urban India and multiple health risks: India's urban inhabitants experience multi-scalar health risks including the world's highest levels of air and noise pollution, limited greenery, lack of access to sidewalks and parks that limit active lifestyles, archaic modes of transport that contribute to air pollution, pernicious access to nutritionally dense unhealthy foods and unprecedented exposure to toxic chemicals and heavy metals.
- This concatenation of exposures dramatically magnified health risks for heart disease and diabetes, referred to as cardiometabolic disease, especially when combined with a lack of physical activity.
- The cities of India are amidst an epidemic of historic proportions in these disorders.
- Globally, there are 7 key physical provisioning systems that provide food, energy, mobility transportation, housing, green infrastructure, water and waste management that lie at the core of human health, well being, equity and sustainability.
- Dysfunctional provisioning systems consume more than 90% of the world's water and global CO_2 emissions and facilitate an estimated 19 million premature deaths annually.
- Based on the primal importance of India's cities for its future, a new narrative for improving health and well being in cities is needed. This is reflected in several high level policy frameworks, such as the United Nations Sustainable Development Goals (SDG) framework, the New Urban Agenda, and the Health in All Policies approach.

Double or triple duty actions

- Investments such as clean energy and electric mobility which are underway in India offer a once in a lifetime opportunity to improve health through their immediate and dramatic impact on air pollution levels, while also helping meet India's climate and equity goals.
- Studies show that even small changes in the latter systems may have a large catalytic effect on health and productivity and serve as double duty or triple duty interventions. For example, making way for safe walking and biking lanes, pavements and no car zones, can help not only improve physical activity and reduce sedentary lifestyles but also reduce the risk from air pollution.
- Regular physical exercise has been to effectively mitigate the impact of other risk factors such as poor diets, particularly those rich in calories and saturated fats.
- The dietary ingestion of excess calories without adequate physical expenditure fuels a vicious cycle of insulin spikes, excess fat deposition that together with inflammation sets the stage for heart disease.

Towards holistic urban policy

- Ensuring that the transition to electric cars also paves the way for active transport options such as walking paths and bicycling lanes may not only provide a mechanism to connect the "last mile" but the health and consequent economic benefits of active transportation accrue on top of the benefits of reducing air pollution, making such investments even more economically viable.
- Thus, increasing active transportation by any means must be a critical component of a clean energy policy.
- Similarly, policies that encourage fresh fruits and vegetables and limit sugars and salt in beverages, which may have the largest impact on health outcomes such as obesity, Type 2 diabetes (T2D) and cardiovascular disease, may help contribute to not only better health outcomes but also economic productivity.
- Health is, unfortunately, an afterthought in most national urban planning policies and mostly non-existent in national urban policy documents from lower and middle income countries.
- Unhealthy diets, reduced physical activity and air pollution in cities in India pose a greater risk to morbidity and mortality than most other risk factors combined including drugs, tobacco, alcohol and accidents.

Q1. What is the estimated urban population of India in 2035, making it the second-highest in the world?

    a) 500 million   b) 600 million   c) 675 million   d) 800 million

Answer: C) 675 million

Q2.Which term is used to refer to the combination of health risks like heart disease and diabetes in urban India?

    a) Metabolic syndrome   b) Cardiometabolic disease   c) Urban syndrome   d) Urban health crisis

Answer: B) Cardiometabolic disease

Q4.How much of the world's water and global CO_2 emissions are consumed by dysfunctional provisioning systems, according to the text?

    a) Less than 10%   b) Approximately 50%   c) Over 90%   d) About 25%

Answer: C) Over 90%

ISA to release report on global adoption of solar technology in November 2023

- The International Solar Alliance (ISA), a gathering of 116 member countries formed to accelerate the global adoption of solar technology, will for the first time compile and release a 'global solar stocktake report'.
- This is inspired by the first ever 'Global Stocktake' of the United Nations Conference of Parties, scheduled to be held in Dubai later 2023. Here countries are expected to give an account of the actions taken until now to transition their economies away from fossil fuel and lay out plans to course correct, if their commitments are insufficient to prevent runaway global warming.
- The Global Stocktake follows from the Paris Agreement signed in 2015 and is expected to be held once in five years.
- The 'solar stocktake' would be released in mid-November, said Ajay Mathur, Director -General, ISA.
- The ISA, which is steered by India and France, is scheduled to hold its 6th annual meeting in Delhi later in November 2023. A key focus area for the organisation is expanding solar installations in Africa and to that end the organisation has set up the Global Solar Facility.
- The aim is to boost the scale of solar investment there and following that expand to West Asia, Latin America, and the Caribbean.
- The Global Solar Facility will have 3 funds: a payment guarantee fund, an insurance fund to mitigate project risks, and an investment fund for technical assistance.
- Solar photovoltaic installations globally touched 1,133 gigawatts (GW) as of 2022, with 191 GW being added in 2022. Nearly a fourth, or about 350 MW, is installed in China, which is not a member of the ISA. China is followed by the United States, a member country, at 111 GW. India ranks among the top five countries globally with 62 GW.

[Centre approves ₹22,303-cr. subsidy on key fertilizers]

- Centre announced a ₹22,303- crore subsidy on phosphatic and potassic (P&K) fertilizers for the current Rabi season, and said the farmers will continue to get key soil nutrient DAP (di-ammonium phosphate) at the old rate of ₹1,350 a bag (50 kg).
- The Union Cabinet, chaired by Prime Minister Narendra Modi, has approved the proposal of the Department of Fertilizers for fixing the nutrient based subsidy (NBS) rates for the rabi season of 2023--24 (from October 1, 2023 to March 31, 2024) on P&K fertilizers.
- In May 2023, the Union Cabinet approved a subsidy of ₹38,000 crore on P&K fertilizers for the kharif season of 2023--24.
- Similarly, NPK (nitrogen, phosphorus, and potassium) will be available at the old rate of ₹1,470 per bag and SSP (single super phosphate) at around ₹500 per bag.
- The MoP (muriate of potash) rates will come down to ₹1,655 per bag from ₹1,700 per bag.
- The Cabinet has fixed the NBS rate of nitrogen (N) at ₹47.02 per kg, phosphorus (P) at ₹20.82 per kg, potash (K) at ₹2.38 per kg and sulphur (S) at ₹1.89 per kg.
- For the kharif season of 2023--24, the government had a fixed per kg subsidy rate on N at ₹76 per kg, ₹41 per kg on P, ₹15 per kg on K and ₹2.8 per kg on S.

Japan's top court rules in favour of transgender people

- Japan's Supreme Court ruled that a law requiring transgender people to undergo sterilisation surgery in order to officially change their gender is unconstitutional.
- The decision by the top court's 15- judge Grand Bench was its first on the constitutionality of Japan's 2003 law requiring the removal of sex organs for a state recognised gender change.

- The decision, which requires the government to reconsider the law, is a first step toward allowing transgender people to change their identity in official documents without getting sterilised.
- But it was not a full victory because the Supreme Court sent the case back to the high court to further examine the requirement for gender -affirmation surgery.
- The decision comes at a time of heightened awareness of issues surrounding LGBTQ+ people in Japan and is a partial victory for that community.
- The judges unanimously ruled that the part of the law requiring sterilisation for a gender change is unconstitutional.
- Under the law, transgender people who want to have their gender assigned at birth changed on family registries and other official documents must be diagnosed as having gender dysmorphia and undergo an operation to remove their sex organs. Other requirements are that they are unmarried and do not have children.

[Viksit Bharat Sankalp Yatra]

- The Centre has asked all departments to deploy officers to showcase its achievements across the country down to the village level, through a roadshow titled Viksit Bharat Sankalp Yatra, which will run from November 20 to January 25, 2024.
- To be sure, the outreach is only about achievements of the last 9 years that corresponds to the two terms of the Bharatiya Janata Party (BJP) that began in 2014.
- The campaign is conveniently timed for the Lok Sabha election which is expected in April--May 2024.
- Joint Secretaries, Directors, and Deputy Secretaries earlier appointed Rath Prabharis (chariots incharge) for the roadshow.
- Rath prabharis renamed as nodal officers after objection over use of govt officers for the outreach programme.
- Election Commission tells govt to ensure no govt scheme yatra in poll-bound states.
- The two-month-long Viksit Bharat Sankalp Yatra will be flagged off by Prime Minister Narendra Modi on November 15, the birth anniversary of freedom fighter and tribal leader Birsa Munda from his birthplace in Khunti, Jharkhand. The day is celebrated as Janjatiya Gaurav Diwas in Munda's honour.
- Besides highlighting the facilities and benefits extended to people in the last one decade (coinciding with the NDA government's term), the vans will also highlight India's achievements in terms of Chandrayaan landing on the Moon, holding a successful G20 Summit and the recent Asian Games.
- The IEC vans will cover 2.5 lakh gram panchayats and 3,700 urban local bodies in over 14,000 locations, officials said, adding that the yatra will conclude on January 25 next year.
- The drive for the full implementation of welfare scheme will ensure the saturation of schemes like the Pradhan Mantri Awas Yojana (Grameen), National Rural Livelihood Mission, PM KISAN, Fasal Bima Yojana, Poshan Abhiyan, Ujjwala Yojana, Ayushman Bharat, Janaushadhi Yojana and the PM Garib Kalyan Anna Yojana, besides skill development schemes and the recently launched Vishwakarma Yojana.

Centre to introduce DNA, face matching
Systems at police stations across the country

- More than a year after the Criminal Procedure Identification Act was passed by Parliament, the Centre is all set to roll out "DNA and face-matching" systems at 1,300 police stations across the country.
- The law enables the police and the Central investigating agencies to collect, store, and analyse physical and biological samples, including retina and iris scans of arrested persons.
- The law was passed by Parliament in April 2022 and the rules were notified in September, 2023.
- The National Crime Records Bureau (NCRB), a Central organisation tasked with rolling out the Act, was assigned the task of finalising the standard operating procedures (SOP) to be followed by police officials.
- Though the Act and rules do not explicitly mention the collection of DNA samples and face matching procedure, the NCRB, in meetings with State police officials, informed them that the said measures would be rolled out in around 1,300 locations spread across police districts, commissionerates, and special investigation units at State headquarters.
- The Union Home Ministry has constituted a Domain Committee for the successful implementation of the Act with representatives from the State Police, Central law enforcement agencies, and other key stakeholders.
- A technical sub-committee for preparing the SOPs for capturing DNA as a measurement has also been constituted.
- The States have been asked to identify the locations and prepare the sites where the measurement collection unit (MCU) may be established as suggested by the NCRB.
- A Delhi Police official said they were recording measurements such as thumb and finger impressions and photographs of accused persons according to the old format and were also using the National Automated Fingerprint Identification System (NAFIS).

- The Act replaced the 100 year Identification of Prisoners Act, 1920 whose scope was limited to capturing finger impressions, footprints, and photographs of convicted prisoners and a specific category of arrested and non convicted persons under the orders of a Magistrate.
- The NCRB has said the tools and systems used by the police should be technologically, legally, and forensically sound and accredited. When the Act was introduced in Parliament in March 2022, the Opposition opposed the Bill, terming it "unconstitutional" and an attack on privacy.

28 years after a man applied for a job in the postal department, the Supreme Court has ordered his appointment noting that there was an error in holding him ineligible for the post

- Ankur Gupta had applied for the post of postal assistant in 1995. After being selected for pre-induction training, he was later excluded from the merit list on the ground that he completed intermediate education from the "vocational stream".
- A Bench of Justices Bela Trivedi and Dipankar Datta exercising its rarely resorted powers under Article 142 of the Constitution, ordered the postal department to appoint Mr. Gupta as a postal assistant on a probationary basis. He would have 10 years of service.
- SC held that a public employer, which is a 'state' within the meaning of Article 12 of the Constitution, would have no authority to throw a candidate out from the range of appointment, without rhyme or reason.

The "Lords of Wankhede'' book launched

- Former India cricketer W.V. Raman and senior journalist R. Kaushik have set about exploring the evolution of Indian cricket in the years between 1983 and 2011 in the book The Lords of Wankhede, which was unveiled at a star studded function, graced by the likes of Dilip Vengsarkar, VVS Laxman, and Venkatesh Prasad, among others, at the Century Club.
- Lords of Wankhede: It is authored by WV Raman and R Kaushik.
- The Lords of Wankhede explores the evolution of Indian cricket in the 28 years between the two World Cup successes.

Verstappen seals 50th Formula 1 win

- Red Bull's triple world champion Max Verstappen took the 50th win of his Formula One career, and record equalling 15th of the season, at the U.S. Grand Prix on Sunday while Lewis Hamilton was disqualified from second after post-race checks.
- Ferrari's Charles Leclerc, who finished sixth, was also excluded for excessive wear of the mandatory wooden plank under the car's floor.
- The victory was Verstappen's t3rd in a row at Austin's Circuit of the Americas and equalled, with four races to spare, the record the Dutch 26 year old set last year for most wins in a single season.

SC holds 'no fundamental right to marry'

- The Supreme Court has delivered its long awaited verdict rejecting petitions to legalise same-sex marriage and delved deeper on the provisions of the Special Marriage Act, 1954 to examine the issue thoroughly, which have convergence and interrelationship with homosexuality.
- 5-judge Constitution Bench of the apex court headed by CJI ruled in a 3:2 verdict against giving constitutional validity to same-sex marriages.
- The CJI, in his opinion, concludes that the court can neither strike down or read words into the Special Marriage Act (SMA) 1954 to include same sex members within the ambit of the SMA 1954.The top court said it is for Parliament and state Legislature to formulate laws on it.
- However, at the same time, the SC says the relationship of marriage is not a static one.
- SC holds that queer persons have an equal right and freedom to enter into a "union".
- All 5 judges on the Bench agreed that there is no fundamental right to marry under the Constitution.
- CJI and Justice Kaul (Minority Opinions): Favoured extension of Civil Union to same-sex couples:
  - A 'civil union' refers to the legal status that allows same-sex couples specific rights and responsibilities that are normally conferred upon married couples. Although a civil union resembles a marriage, it does not have the same recognition in personal law as marriage.

Legality of Same-Sex Marriages in India:
- The right to marry is not expressly recognized either as a fundamental or constitutional right under the Indian Constitution but a statutory right.

○ Though marriage is regulated through various statutory enactments, its recognition as a fundamental right has only developed through judicial decisions of India's Supreme Court. Such declaration of law is binding on all courts throughout India under Article 141 of the Constitution.

Previous Views of Supreme Court on Same-Sex Marriages:

● **Shafin Jahan v. Asokan K.M. and others 2018**: *Marriage as a Fundamental Right*
● SC held that the right to marry a person of one's choice is integral to Article 21 of the Constitution, while referring to Article 16 of the Universal Declaration of Human Right and the Puttaswamy case.
● Article 16 (2) in the Indian constitution provides that there cannot be any discrimination on grounds only of religion, race, caste, sex, descent, place of birth, residence or any of them.
● The right to marry is intrinsic to the liberty which the Constitution guarantees as a fundamental right, as the ability of each individual to take decisions on matters central to the pursuit of happiness. Matters of belief and faith, including whether to believe are at the core of constitutional liberty.
● **Navjet Singh Johar and others v. Union of India 2018**: *LGBTQ Community Entitled to all Constitutional Rights*
● The SC held that members of the LGBTQ community "are entitled, as all other citizens, to the full range of constitutional rights including the liberties protected by the Constitution" and are entitled to equal citizenship and "equal protection of law".

Q1. Which Article of the Constitution of India safeguards one's right to marry the person of one's choice? (2019)
a) Article 19   b) Article 21   c) Article 25   d) Article 29
Ans: (b)

Q2. In which country was the first same-sex marriage legalized?
a) United States   b) United Kingdom   c) Canada   d) Netherlands
Answer: D) Netherlands

Q3. What landmark U.S. Supreme Court case in 2015 legalized same-sex marriage nationwide in the United States?
a) Roe v. Wade   b) Brown v. Board of Education   c) Obergefell v. Hodges   d) Miranda v. Arizona
Answer: C) Obergefell v. Hodges

Q4. Which organization advocates for LGBTQ+ rights and played a significant role in the fight for marriage equality in the United States?
a) ACLU (American Civil Liberties Union)   b) WHO (World Health Organization)
c) PETA (People for the Ethical Treatment of Animals)   d) FIFA (Fédération Internationale de Football Association)
Answer: A) ACLU (American Civil Liberties Union)

Q5. In many countries, same-sex couples have the same legal rights and responsibilities as opposite-sex couples in marriage. What term is often used to describe this legal recognition?
a) Civil partnership   b) Domestic partnership   c) Civil union   d) Common-law marriage
Answer: A) Civil partnership

ISRO has started a crucial phase of its human spaceflight mission

● At 10 a.m. on October 21, ISRO commenced the 1st uncrewed developmental flight of its 'Gaganyaan' human spaceflight mission from Sriharikota, designated TV-D1.
● The launch vehicle, a single stage rocket, carried a crew module fitted with a crew escape system (CES) to an altitude of 12 km. There, the CES detached itself with the crew module from the rocket and climbed up to 17 km. In response to a command, the CES separated from the crew module, leaving the module to reorient itself before dropping over the Bay of Bengal.

SC: No Fundamental Right to Marry for LGBTQIA+

● Recently, The Supreme Court has delivered its long awaited verdict rejecting petitions to legalise same-sex marriage and delved deeper on the provisions of the Special Marriage Act, 1954 to examine the issue thoroughly, which have convergence and interrelationship with homosexuality.
● A 5-Judge Constitution Bench of the apex court headed by Chief Justice of India ruled in a 3:2 verdict against giving constitutional validity to same-sex marriages.

- The CJI, in his opinion, concludes that the court can neither strike down or read words into the Special Marriage Act (SMA) 1954 to include same sex members within the ambit of the SMA 1954.The top court said it is for Parliament and state Legislature to formulate laws on it.
- However, at the same time, the SC says the relationship of marriage is not a static one.
- SC holds that queer persons have an equal right and freedom to enter into a "union".
- All 5 judges on the Bench agreed that there is no fundamental right to marry under the Constitution.
- CJI and Justice Kaul (Minority Opinions): Favoured extension of Civil Union to same-sex couples:
- A 'civil union' refers to the legal status that allows same-sex couples specific rights and responsibilities that are normally conferred upon married couples. Although a civil union resembles a marriage, it does not have the same recognition in personal law as marriage.
- The Supreme Court held that there is no fundamental right to marry in India. Consequently, the Court decided that same-sex couples cannot marry.
- Despite the denial of the right to marry, the Supreme Court unanimously directed that same-sex couples should be protected from harassment. The Court also issued directives to sensitize authorities and set up a committee to address related issues.
- SC referred to previous legal developments, including the decriminalization of consensual sex between non-heterosexual couples in the Navtej Singh Johar case and the recognition of the right of individuals to identify their own gender in NALSA. These developments laid the groundwork for the LGBTQI community's demand for the right to marry.
- India, as a signatory to the Universal Declaration of Human Rights (UDHR), is obligated to align its legislation with the principles of the UDHR, which includes the right to marry. Right to marry is a human right under the UDHR.
- refusal to recognize same-sex marriages perpetuates the notion that same-sex couples are "not fit for marriage" and reduces them to second-class citizens, which could have broader societal implications.
- Legality of Same-Sex Marriages in India:
- The right to marry is not expressly recognized either as a fundamental or constitutional right under the Indian Constitution but a statutory right.
- Though marriage is regulated through various statutory enactments, its recognition as a fundamental right has only developed through judicial decisions of India's Supreme Court. Such declaration of law is binding on all courts throughout India under Article 141 of the Constitution
- Earlier Views of Supreme Court on Same-Sex Marriages:

Shafin Jahan v. Asokan K.M. and others 2018: *Marriage as a Fundamental Right*

- SC held that the right to marry a person of one's choice is integral to Article 21 of the Constitution, while referring to Article 16 of the Universal Declaration of Human Right and the Puttaswamy case.
- Article 16 (2) in the Indian constitution provides that there cannot be any discrimination on grounds only of religion, race, caste, sex, descent, place of birth, residence or any of them.
- The right to marry is intrinsic to the liberty which the Constitution guarantees as a fundamental right, as the ability of each individual to take decisions on matters central to the pursuit of happiness. Matters of belief and faith, including whether to believe are at the core of constitutional liberty.

Navjet Singh Johar and others v. Union of India 2018: *LGBTQ Community Entitled to all Constitutional Rights*

- The SC held that members of the LGBTQ community "are entitled, as all other citizens, to the full range of constitutional rights including the liberties protected by the Constitution" and are entitled to equal citizenship and "equal protection of law".

Q 1. Which Article of the Constitution of India safeguards one's right to marry the person of one's choice? (2019)

    a) Article 19   b) Article 21   c) Article 25   d) Article 29

Ans: (b)

[ISRO has started a crucial phase of its human spaceflight mission]

Two experiments conducted by ISRO paved way for Gaganyaan test mission

At 10 a.m. on October 21 ISRO commenced the first uncrewed developmental flight of its 'Gaganyaan' human spaceflight mission from Sriharikota, designated TV-D1. The launch vehicle, a single stage rocket, carried a crew module fitted with a crew escape system (CES) to an altitude of 12 km. There, the CES detached itself with the crew module from the rocket and climbed up to 17 km. In response to a command, the CES separated from the crew module, leaving the module to reorient itself before dropping over the Bay of Bengal.

- There were 2 important forerunners to the success of the Test Vehicle Abort Mission (TV-D1) flight that ISRO conducted. During the test, an unmanned crew module was brought back safely to earth after launching it on a small rocket and simulating an emergency abort command.
- The test and its forerunners are the ISRO's first major steps towards launching humans to orbit as part of its Gaganyaan mission.
- The TV-D1 test was carried out smoothly, especially given that the ISRO had to overcome a glitch 5 seconds before liftoff at 8.45 a.m., when the ground computer, called the Automatic Launch Sequence, halted the lift-off.
- The first forerunner to the TV-D1 mission was the ISRO's Space Capsule Recovery Experiment (SRE-1).
- An orbiting satellite called the SRE was brought back to earth on January 22, 2007, after a Polar Satellite Launch Vehicle (PSLV) placed it in orbit on January 10.
- In a series of maneuvers, the shuttlecock shaped SRE came down from an altitude of 635 km to splash down into the Bay of Bengal, 140 km from Sriharikota, where the Coast Guard recovered it.
- India, thus, successfully brought back an orbiting satellite in its first attempt.
- Overall, the SRE-1 mission showcased the ISRO's mastery of reentry technology.
- This test, called Crew Module Atmospheric Re-entry Experiment (CARE), marked India's second step towards sending its astronauts into space and getting them back.

Gaganyaan' human spaceflight mission

- The 1st unmanned mission is planned for December 2021.
- It was initially envisaged that the Rs. 10,000 crore Gaganyaan mission aims to send a 3-member crew to space for 5 to 7 days by 2022 when India completes 75 years of independence.
- Under the Gaganyaan schedule:
- Three flights will be sent into orbit.
- There will be two unmanned flights and one human spaceflight.
- The Gaganyaan system module, called the Orbital Module will have three Indian astronauts, including a woman.
- It will circle Earth at a low-earth-orbit at an altitude of 300-400 km from earth for 5-7 days.
- The payload will consist of:
- Crew module - spacecraft carrying human beings.
- Service module - powered by two liquid propellant engines.
- GSLV Mk III, also called the LVM-3 (Launch Vehicle Mark-3,) the three-stage heavy lift launch vehicle, will be used to launch Gaganyaan as it has the necessary payload capability.
- In June 2019, the Human Space Flight Centre of the ISRO and the Russian government-owned Glavkosmos signed a contract for the training, which includes Russian support in the selection of candidates, their medical examination, and space training.

South Korea, U.S., Japan hold joint air drills involving B-52 bomber

- South Korea held a joint aerial exercise with Japan and the United States on October 22.
- The air drill marked the 1st such collaboration between the 3 countries. The drill was aimed at expanding the countries' response capabilities against the threat posed by North Korea.
- The drill involved a US B-52 bomber along with fighter jets of the 3 countries.
- The US bomber landed at a South Korean airbase following a flyover at the country's largest defence exhibition.
- B-52 bombers fly at subsonic speed but can travel more than 8800 miles without any need of refueling. The bomber can reach an altitude of 50,000 feet.
- Trilateral exercise took place south of the Korean peninsula where South Korea and Japan's Air Defence Identification Zones overlap.

How bat genomes provide insights into immunity and cancer: science article

- Bats are remarkable creatures with unique characteristics, and they play important ecological roles.
- Bats are the only mammals capable of sustained flight, which sets them apart from other animals. Their ability to fly allows them to navigate and hunt for food in ways that other mammals cannot.
- Bats have relatively long lifespans and are more protected from various diseases, including cancer. Their genetics and immune systems have evolved in ways that make them resistant to certain diseases that affect other animals.

- Bats use Echolocation to navigate and locate objects. This unique ability enables them to hunt and travel in complete darkness, as they don't rely on light like humans do.
- Bats make up a significant portion of the world's mammal population, accounting for about 20%. There are over 1,400 species of bats worldwide, with some of them being endangered or vulnerable.
- Bats have gained notoriety for being reservoir hosts for several deadly viruses, including coronaviruses, Nipah virus, Ebola, Marburg virus, and Hendra virus. The COVID-19 pandemic has highlighted the role of bats in transmitting diseases to humans.
- Scientists have been studying the genomes of various bat species to understand their unique characteristics, including their resistance to diseases and their ability to echolocate. The Bat1K global genome consortium aims to sequence the genomes of all bat species.
- Bats have a distinct set of immunity-related genes, which differ from those of humans. Their immune systems have evolved to control the spread of viruses while mitigating the inflammatory response, which is why bats themselves do not get infected.
- Bats can host multiple viruses simultaneously, a phenomenon known as co-infection, without falling ill themselves.
- Long-read sequencing technologies have allowed researchers to assemble nearly complete whole genomes of organisms, making it easier to study the genetic makeup of bats.
- Recent research using long-read technology has shown that bats have contracted subsets of genes involved in immune responses, specifically interferons. This genetic adaptation helps them dampen the inflammatory response against viruses. Additionally, bats have genes involved in suppressing tumors and repairing DNA, which contributes to their longer lifespan and lower risk of cancer.
- Human activities like deforestation and ecological degradation continue to impact wildlife habitats and bring humans into closer contact with animals, the risk of zoonotic diseases (diseases that can be transmitted from animals to humans) may increase. Genome sequencing and advanced technologies can help in understanding and managing these diseases without disrupting the natural balance.
- Thus Bats are unique animals with extraordinary features and a crucial role in maintaining ecological balance. However, their ability to host and transmit viruses has drawn significant attention, especially in the context of emerging infectious diseases like COVID-19.

Transitional Committee on Loss and Damage Fund **fails to reach consensus on operationalisation: Loss and damage talks remain mired ahead of COP 28**

- A crucial meeting on climate "loss and damages" ahead of COP28 ended in failure, with countries from the global north and south unable to reach an agreement.
- The agreement to set up a dedicated fund to help vulnerable countries cope with climate "loss and damage" was a flagship achievement of last year's COP27 talks in Egypt.
- Conference of Parties (COP 28):
- 28th session of COP 28 to the UNFCCC will be held in Abu Dhabi in 2023.
- The United Nations Framework Convention on Climate Change (UNFCCC), signed in 1992 at the United Nations Conference on Environment and Development also known as the Earth Summit/ Rio Summit/Rio Conference.
- UNFCCC entered into force on 21 March 1994, and has been ratified by 197 countries.
- It is the parent treaty of the 2015 Paris Agreement. It is also the parent treaty of the 1997 Kyoto Protocol.

COP's with Significant Outcomes:
- **1995: COP1 (Berlin, Germany)**
- **1997: COP 3 (Kyoto Protocol)**
  - It legally binds developed countries to emission reduction targets.
- **2002: COP 8 (New Delhi, India) Delhi Declaration.**
  - Focuses on the development needs of the poorest countries and the need for technology transfer for mitigating climate change.
- **2007: COP13 (Bali, Indonesia)**
  - Parties agreed on the Bali Road Map and Bali action plan, which charted the way towards a post-2012 outcome. The Plan has five main categories: shared vision, mitigation, adaptation, technology and financing.
- **2010: COP 16 (Cancun)**
  - Resulted in the Cancun Agreements, a comprehensive package by governments to assist developing nations in dealing with climate change.

- ○ The Green Climate Fund, the Technology Mechanism and the Cancun Adaptation Framework were established.
- **2011: COP 17 (Durban)**
  - ○ Governments commit to a new universal climate change agreement by 2015 for the period beyond 2020 (Resulted in the Paris Agreement of 2015).
- **2015: COP21 (Paris)**
  - ○ To keep global temperature well below 2.0C above pre-industrial times and endeavor them to limit them even more to 1.5C.
  - ○ It requires rich nations to maintain USD 100bn a year funding pledge beyond the year 2020.
- **2016: COP22 (Marrakech)**
  - ○ To move forward on writing the rule book of the Paris Agreement.
  - ○ Launched the Marrakech Partnership for Climate Action.

Why did SC not allow same-sex marriage?

- On October 17, a five- judge Constitution Bench of the Supreme Court, declined to legalise same-sex marriage, leaving it to Parliament to legislate on the subject.
- The Bench ruled that there is no fundamental right to marry, and the court cannot intervene.
- What did the petitioners want?
- The petitioners had sought a ruling by which the Special Marriage Act (SMA), 1954, which provides for a civil marriage for couples who cannot marry under their personal law, should be interpreted as gender neutral, thus allowing same-sex couples to marry under it.
- The SMA, they argued violated Articles 14, 15, 19, 21 and 25 by not allowing marriage between same-sex, gender non-conforming, LGBTQIIA+ couples, and sought the words "husband" and "wife" as well as any other gender specific term to be substituted by the word "party" or "spouse".
- They also sought joint adoption rights, nominee rights with respect to healthcare decisions, "preventative, remedial, protective and punitive measures" by all State governments to guarantee their safety and security, and directions to the Union and State governments, district and police authorities to provide protection to adult, consenting LGBTQIA+ couples from their families.
- How did the top Court rule?
- The Supreme Court said it could not issue a mandamus to Parliament; it determined the scope and effect of certain fundamental rights, and then ruled that the Constitution does not recognise marriage as a fundamental right.
- "The Constitution does not expressly recognise a fundamental right to marry".
- The **majority** opinion, of **Justices Ravindra Bhat, Hima Kohli,** and backed by a separate concurring judgment by **P.S. Narasimha,** said that *"an entitlement to legal recognition of the right to union — akin to marriage or civil union, or conferring legal status upon the parties to the relationship — can be only through enacted law."*
- The **minority opinion** of **Chief Justice of India D.Y. Chandrachud and Justice Sanjay Kishan Kaul**, said the *LGBTQIA+ community had a fundamental right to form relationships and that the state was obligated to recognise and grant legal status to such unions, so that same-sex couples could avail the material benefits provided under the law.*
- **Queerness is a natural phenomenon, the CJI pointed out, which the Navtej Singh Johar case had clarified.**

Why did SC refuse to read down the SMA?

- ○ The Court felt that if the SMA was held void for excluding same-sex couples, it would mean going back to a time when two persons of different castes and religions could not marry.
- ○ Second, it said that if it were to read down — or up — provisions of the SMA, meaning add or delete words, this would be venturing into the realm of the legislature. "Whether a change should be brought into the legislative regime of the SMA is for Parliament to determine," the CJI said.
- ○ "This Court cannot either strike down the constitutional validity of SMA or read words into the SMA because of its institutional limitations... [this] would amount to judicial legislation.
- ○ The Court in the exercise of the power of judicial review must steer clear of matters, particularly those impinging on policy, which fall in the legislative domain," he said.

PM flags off country's 1st Regional Rapid Transit System "Namo Bharat"

Delhi-Ghaziabad-Meerut RRTS Corridor at Sahibabad RapidX Station, Uttar Pradesh.

- PM Modi also flagged off the RapidX train connecting Sahibabad to Duhai depot.
- RapidX which is the country's 1st semi-high-speed regional rail service.

- RapidX train 17- km stretch from Sahibabad to Duhai Depot in Uttar Pradesh; the full 82-km Delhi--Ghaziabad--Meerut corridor is scheduled to be functional by 2025.
- Developed at a cost of more than ₹30,000 crore, the train will allow a commuter to travel between Delhi and Meerut in less than an hour.
- A total of 8 RRTS corridors have been identified for development in the National Capital Region. Three RRTS corridors have been prioritised for implementation in the first phase: Delhi--Ghaziabad-Meerut; Delhi--Gurugram-SNB--Alwar; and Delhi--Panipat.

Siddharth Mridul sworn in as Chief Justice of Manipur HC

- Justice Siddharth Mridul sworn in as the Chief Justice of Manipur High Court during a ceremony held at the Raj Bhavan in Imphal.
- Manipur Governor Anusuiya Uikey administered the oath of office to Justice Mridul.
- Justice Mridul, who became the 7th seventh Chief Justice of Manipur High Court, had previously served as a judge of Delhi High Court for more than 15 years.
- Meanwhile, Justice M V Muralidharan, who issued the controversial order asking the Manipur government to consider inclusion of the Meitei community in the Scheduled Tribes list, has been transferred to the Calcutta HC.

RAJESH & ANR. VS THE STATE OF MADHYA PRADESH

- The Supreme Court of India while setting aside the conviction of 3 accused persons alleged to have been involved in murder and related offences, emphasised the need to devise *'a consistent and dependable code of investigation'* so that the guilty do not walk free on technicalities.
- The Court not only pointed out some *illegalities in the investigation* but also echoed the *comments of the Justice Malimath Committee on Reforms of the Criminal Justice System* and the observations of the Law Commission of India in its Report number 239.
- A major pitfall pointed out by the Court relates to **Section 27 of the Indian Evidence Act** which lays down *Conditions of the admissibility of any fact discovered in consequence of information received from a person 'accused of any offence'*, *'in the custody of a police officer'*.
- The Court held that the *person could not be said to be in police custody till he was formally arrested*, as he did not figure as an accused person in the First Information Report (FIR) and was not accused of any offence till his arrest.
- *This assumption does not appear to be a correct proposition of the law*. **IN RE: MAN SINGH (1959),** the Court held that the word **'custody' does not necessarily mean detention or confinement.**
- The *submission to custody*, *by any action or words, is also custody within the meaning of this section*.
- *Even indirect control over the movements of suspects by the police has been held to constitute 'police custody'*. **RajRajesh & Anr. vs The State of Madhya Pradeshesh & Anr. vs The State of Madhya Pradesh**
- In **CHHOTEYLAL VS STATE OF U.P. (1954)** and many other similar cases, the Court has held that **'an accused is in police custody within the meaning of the section when he is under surveillance of the police and cannot break away from the company of the police'.**
- The Court in **STATE OF U.P. VS DEOMAN UPADHYAYA (1960)** held that the expression **"accused of any offence" is descriptive of the person against whom evidence, relating to information alleged to be given by him, can be proved by this section.**
- In **MD. DASTAGIRI VS STATE (1960)**, the top court held that **it is not necessary that when a statement is made by a person, he should be an accused, that it is enough, if he is an accused person when it is sought to be proven in court.**
  - There could be cases where the discovery of incriminating article(s) based on information revealed by the suspect (not mentioned as accused in the FIR) could be the first piece of evidence (whether substantive or corroborative), thereby necessitating arrest.
- **Therefore, custody under Section 27 of the Indian Evidence Act does not necessarily mean FORMAL ARREST by the police.**
- Similarly, the Court laid too much emphasis on seeking compliance under Section **100(4) and Section 100(5) of the Code of Criminal Procedure (CrPC)** relating to **presence of INDEPENDENCE WITNESSES during Search and Seizure of a closed place, in the Discovery Memos such as discovery and seizure of the body of the deceased and his clothes, and weapon of murder.**

- In **Musheer Khan@Badshah Khan & Anr vs State Of M.P. (2010)**, the Court held that **'if the discovery under section 27 of the Indian Evidence Act is otherwise reliable, its evidentiary value is not diluted just by reason of non-compliance of section 100(4) or section 100(5) of the CrPC'**.
  - Similar views were expressed by the top court in **State (NCT of Delhi) vs Sunil (2001)** also.
- In fact, such panchnamas are prepared by the police as a rule of caution, and not in compliance with any mandatory provision of law.
- On the subject of Investigation, the Malimath Committee had recommended that the investigation wing should be separate from that of the law and order wing. Though this separation may not prove to be a panacea for improving investigation in its totality (in the absence of other factors), the efforts made by States must be reviewed before blaming the police in whole for the irregularities.
- The **Law Commission's Report number 239** which was *submitted on the directions of the Court in* **WP(C) No. 341/2004, Virender Kumar Ohri vs Union of India and Others** pertained to suggestions made with regard to **'Expeditious Investigation and Trial of Criminal Cases Against Influential Public Personalities'**.
  - With regard to investigation, the Law commission observed that *'the police stations are understaffed', 'sufficient priority is not given for investigation of In laying down certain duties to be followed by adolescent boys and girls, the bench held: It is the duty/obligation of every female adolescent to:*
  - *(i) Protect her right to integrity of her body. (ii) Protect her dignity and self-worth. (iii) Thrive for overall development of her self-transcending gender barriers. (iv) Control sexual urge/urges as in the eyes of the society she is the looser when she gives in to enjoy the sexual pleasure of hardly two minutes. (v) Protect her right to autonomy of her body and her privacy.*
  - *crime' and that 'there is no periodic exercise to upgrade the skills of investigation'.*
- The commission not only mentioned its own 154th report (which recommended separation of investigation from law and order duties), but also reiterated the directions of the top court given in **Prakash Singh & Ors. vs Union of India and Ors. (2006).**

Manipur HC permits tribes to challenge the March 27 order

- Manipur High Court has allowed the tribal bodies in the State to appeal against the controversial March 27 order which directed the State government to send a recommendation on Scheduled Tribe (ST) status for Meiteis.
- A Division Bench of Justices Ahanthem Bimol Singh and A. Guneshwar Sharma, in its October 19 order, allowed the tribal bodies to appeal against the order, noting the nature of the grievances raised by them and the arguments advanced by various parties. This order has now paved the way for the tribal bodies' appeal to be taken up for hearing.
- In March, a single-judge bench of then-acting Chief Justice MV Muralidharan had passed an order on a petition by members of the Meitei Tribes Union seeking directions to the Manipur government to act on their pleas for the community's inclusion in the Scheduled Tribe list
- The order led to widespread protests in Manipur. Several organisations led by the All Manipur Tribal Union moved the Manipur High Court on May 3, seeking permission to file a third-party appeal against the March order.
- The members of the Meitei community account for 60% of the state's population and are largely concentrated in the Imphal Valley.

Probhat Purkait @ Provat vs State of West Bengal:
[DB of Justices Chitta Ranjan Dash & Partha Sarathi Sen]
Calcutta High Court says every 'female adolescent should control sexual urge'

- Calcutta HC issued a slew of recommendations to adolescent boys and girls in a case concerning the appeal of young boy, who had been sentenced to 20 years in prison for engaging in sexual relations with a his romantic partner, who was a minor.
- HC: Adolescent girls must control their sexual urges instead of giving in to two minutes of pleasure and adolescent boys must respect young girls and women and their dignity and bodily autonomy.
- In laying down certain duties to be followed by adolescent boys and girls, the bench held: It is the duty/obligation of every female adolescent to:
- (i) Protect her right to integrity of her body. (ii) Protect her dignity and self-worth. (iii) Thrive for overall development of her self-transcending gender barriers. (iv) Control sexual urge/urges as in the eyes of the society she is the looser when she gives in to enjoy the sexual pleasure of hardly two minutes. (v) Protect her right to autonomy of her body and her privacy.

[Special and Local Laws (SLLs) also need to be reformed]

The recent tabling of Bills on criminal laws has become a causa celebre since they set overdue reforms into motion, the Bills do well to amend the substantive criminal law as codified in the Indian Penal Code (IPC), Code of Criminal Procedure (CrPC) and Indian Evidence Act (IEA).

- The offences and procedures outlined in the IPC or CrPC represent just one facet of a general criminal law and its vital to recognise that the most critical offences and procedures are encompassed within the Special and Local Laws (SLLs).
- SLLs have immense quantitative and qualitative relevance in the Indian criminal justice system.
  - To illustrate, nearly 39.9% of all cognizable offences registered in 2021 were under SLLs. As per the Crime in India Statistics of 2021, of the total of nearly 61 lakh cognizable offences registered, 24.3 lakh offences were registered under SLLs alone.
- On the one hand, SLLs such as the Unlawful Activities (Prevention) Act, 1967 (UAPA) and the Maharashtra Control of Organised Crime Act, 1999 (MCOCA) suffer from glaringly deficient, ambiguous and vague definitions of offences and terms such as 'terrorist act', 'unlawful activity', 'organised crime', 'organised crime syndicate' etc.
- The Protection of Children from Sexual Offences Act, 2012 is increasingly being criticised for its applicability to consensual sexual activities between minors.
- Supreme Court in the case of P. Mohanraj versus M/s Shah Brothers Ispat Ltd. (2021) referred to Section 138 of the Negotiable Instruments Act, 1881 as a 'civil sheep' in a 'criminal wolf's' clothing.
- Procedurally too, it is through SLLs that universally accepted due process values are increasingly being diluted.
  - Increased powers of search and seizure under Section 43A of the UAPA and the admissibility of confessions recorded by police officers under Section 18 of the MCOCA are prime examples.
  - The stringent provisions provided for under Section 43(D)(5) of the UAPA, Section 37 of the Narcotic Drugs and Psychotropic Substances Act, 1985 and Section 45 of the Prevention of Money Laundering Act (PMLA) 2002 make the grant of bail a near impossibility.
- An all encompassing legal code Between the enactment of the IPC in 1860 and today, there has been a major shift in the canvas of criminal laws.
- The challenges to homosexuality under Section 377 in Navtej Johar versus Union of India (2018) and sedition under Section 124A in S.G. Vombatkere versus Union of India (2022) are all symbolic of the need to reform several aspects of our criminal laws.
- Nonetheless, it is hard to argue that as far as the idea of codification is concerned, the penal experiment in the form of IPC and CrPC has been unsuccessful.
- As successive governments place increasing reliance on the SLLs for a variety of reasons, it becomes imperative that the same should not be allowed to overpower the idea of codification of penal laws as imbibed in the IPC as well as the CrPC.
- Non Inclusion of the substantive and procedural aspects of the SLLs in the ongoing reform project is a serious limitation. It is imperative therefore that a second generation of reforms be brought in, in order to address the lacunae.

SC asks States to appoint officers under POSH Act

- Supreme Court of India has directed Ministry of Women and Child Development (MoWCD) of all States/UTs to appoint district officers under the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (POSH Act) to ensure the effective implementation of the law.
- The POSH Act **mandates states to appoint an officer in every district** who would play a "pivotal" role in the implementation of the Act.
- The District Officer would constitute Local Complaints Committees (LCCs) to receive complaints from women employed in small establishments with less than 10 workers or cases in which the assailant is the employer himself.
- A District Officer's responsibilities also included appointing nodal officers under the Act in rural, tribal and urban areas.
- PoSH Act defines **sexual harassment** to include unwelcome acts such as **physical contact and sexual advances, a demand or request for sexual favours, making sexually coloured remarks, showing pornography, and any other unwelcome physical, verbal, or non-verbal conduct of a sexual nature.**
- The Supreme Court in a landmark judgment in the **Vishakha and others v State of Rajasthan 1997** case gave **'Vishakha guidelines'.**
- *These guidelines formed the basis for the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013.*

Q1. Two of the schemes launched by the Government of India for Women's development are Swadhar and Swayam Siddha. As regards the difference between them, consider the following statements: (2010)

1. Swayam Siddha is meant for those in difficult circumstances such as women survivors of natural disasters or terrorism, women prisoners released from jails, mentally challenged women etc.,whereas Swadhar is meant for holistic empowerment of women through Self Help Groups.
2. Swayam Siddha is implemented through Local Self Government bodies or reputed Voluntary Organizations whereas Swadhar is implemented through the ICDS units set up in the states.

Which of the statements given above is/are correct?

a) 1 only   b) 2 only   c) Both 1 and 2   d) Neither 1 nor 2

Ans: (d)

Passenger Ferry service started between

Kankesanthurai in Sri Lanka's Northern Province and Nagapattinam in Tamil Nadu.

- This high-speed passenger ferry service resumed on October 14, 2023, after a gap of nearly 40 years.
- Minister for Ports, Shipping and Waterways, Sarbananda Sonowal.
- High-speed craft (HSC) *Cheriyapani*, embarked on its journey from the Nagapattinam port with 50 passengers and 12 crew members headed by Captain Biju George, on board.
- People of both countries have travelled across the Palk strait for many years; the ferry services operated in the past were suspended due to the civil war in Sri Lanka.
- 12 years ago, a ferry service between Colombo and Thoothukudi did not last long due to a lack of patronage.
- There was also the popular Boat Mail connecting Chennai and Talaimannar to Rameswaram and Dhanushkodi through a rail link and a ferry, which nonagenarians recall.

Centre notifies appointment of 17 judges across 8 HCs.

- 17 judges across 8 High Courts and the transfer of 16 judges across several High Courts, including the acting Chief Justice of Manipur.
- The move came days after the Supreme Court had expressed its displeasure over delay in appointment and transfer of High Court judges.
- The latest round of transfers included **Justice M.V. Muralidharan, the Acting Chief Justice of the Manipur High Court, to the Calcutta High Court.** Justice Muralidharan's order in March to consider including the Meitei community in the Scheduled Tribes list is said to be one of the triggers for the violence that erupted in Manipur.
- Among those who have been appointed as judges in 8 High Courts, **11 are judicial officers, while six are advocates.**
- The Supreme Court Collegium recommended the names of 13 advocates as judges of different High Courts.
- The collegium recommended the names of advocates **N. Unni Krishnan Nair, and Kaushik Goswami as judges of the Gauhati High Court.**
- It also has recommended the names of **Siddhartha Sah and Alok Mahra for appointment as judges of the Uttarakhand High Court.**
- It has recommended **Harmeet Singh Grewal, Deepinder Singh Nalwa, Sumeet Goel, Sudeepti Sharma and Kirti Singh for appointment as judges of the High Court of Punjab and Haryana.**

India likely to sign deal with U.S. for 31 MQ-9B drones by February 2024

- Agreement for 31 MQ-9B Unmanned Aerial Vehicles (UAVs) with the U.S. is expected to be finalized by February 2024. Deliveries will commence from February 2027.
- General Atomics (GA) is set to establish a global Maintenance, Repair, and Overhaul (MRO) facility in India as part of the agreement.
- In June 2023, the Ministry of Defence (MoD) approved the acquisition of 31 MQ-9B UAVs from GA, including 15 for the Indian Navy and eight each for the Indian Army and Air Force.
- The estimated cost of this procurement is $3,072 million through the U.S. Foreign Military Sales (FMS) route.

Ayodhya Ram temple trust receives Foreign Contribution Regulation Act (FCRA) licence to accept foreign donations

- The MHA has granted approval to the Shri Ram Janmbhoomi Teerth Kshetra to receive contributions from foreign sources for the construction of Ram temple in Ayodhya.
- He added that foreign donations would be accepted only at the State Bank of India branch at 11 Sansad Marg in New Delhi.
- The Ram temple is being built after the Supreme Court's 2019 judgment, which maintained that the Muslim community was wrongfully deprived of the 450 year old Babri masjid demolished in 1992, but rejected its claim for exclusive title and possession of the land in Ayodhya.

- The temple will thus be situated on the 67.3 acres of land accorded to the trust in the judgment. The temple construction committee has also acquired an additional 71 acres of land to build public utilities near the temple.

Centre raises MSP for Rabi crops, farmers unhappy

- Union cabinet approved a 2-7% increase in MSP of 6 rabi crops and raised inflation-linked pay for central employees and pensioners ahead of key assembly and general elections, where farmers and government employees are influential voting blocs.
- Centre increased wheat and masur prices by a maximum of 7%, followed by barley (6.6%), mustard and rapeseed (3.6%), safflower (2.6%) and chana (gram) (2%).
- In absolute terms, the MSP for wheat rose to ₹2,275 from ₹2,125 a quintal and ₹6,425 per quintal from ₹6,000 for masur. The barley MSP has been hiked to ₹1,850 from ₹1,735 per quintal last season, and the chana MSP to ₹5,440 from ₹5,335 per quintal in the previous season. In the case of oilseed crops, the Centre hiked the MSP for rapeseed & mustard oilseed and safflower oilseed to ₹5,650 per quintal from ₹5,450 and ₹5,800 a quintal from ₹5,650 in 2023-24 (October-March) marketing season, respectively. The rabi season contributes to almost half of India's total foodgrains output.
- Government sets MSP in line with the Union Budget 2018-19 announcement of fixing MSP at a level of at least 1.5 times the all-India weighted average cost of production to ensure adequate compensation for farmers.
- India is estimated to have produced record-high foodgrains at 329.7 million tonnes, 14.1 million tonnes higher than the previous year.

[69th National Awards]
President Murmu gives away film awards; actor Waheeda Rehman gets Phalke Award

- Dadasaheb Phalke Award, India's highest film honour: **Waheeda Rehman**
- 69th National Awards, given out for the year 2021
- S.S. Rajamouli's blockbuster RRR took away 6 awards
- Gangubai Kathiawadi by Sanjay Leela Bhansali bagged awards in 5 categories.
- LIST OF AWARDS:
- Best Feature Film: Rocketry
- Best Director: Nikhil Mahajan, Godavari
- Best Popular Film Providing Wholesome Entertainment: RRR
- Nargis Dutt Award for Best Feature Film on National Integration: The Kashmir Files
- Best Actor: Allu Arjun, Pushpa
- Best Actress: Alia Bhatt, Gangubai Kathiawadi and Kriti Sanon, Mimi
- Best Supporting Actor: Pankaj Tripathi, Mimi
- Best Supporting Actress: Pallavi Joshi, The Kashmir Files
- Best Child Artist: Bhavin Rabari, Chhello Show
- Best Screenplay (Original): Shahi Kabir, Nayattu
- Best Screenplay (Adapted): Sanjay Leela Bhansali & Utkarshini Vashishtha, Gangubai Kathiawadi
- Best Music Director (Songs): Devi Sri Prasad, Pushpa
- Best Music Direction (Background Music): MM Keeravaani, RRR
- Best Male Playback Singer: Kaala Bhairava, RRR
- Best Female Playback Singer: Shreya Ghoshal, Iravin Nizhal
- Best Lyrics: Chandrabose, Konda Polam's Dham Dham Dham
- Best Hindi Film: Sardar Udham
- Best Kannada Film: 777 Charlie
- Best Malayalam Film: Home
- Best Gujurati Film: Chhello Show
- Best Tamil Film: Kadaisi Vivasayi
- Best Telugu Film: Uppena
- Best Maithili Film: Samanantar
- Best Mishing Film: Boomba Ride
- Best Marathi Film: Ekda Kaay Zala
- Best Bengali Film: Kalkokkho
- Best Assamese Film: Anur

- Best Meiteilon Film: Eikhoigi Yum
- Best Odia Film: Pratikshya
- Indira Gandhi Award for Best Debut Film of a Director: Meppadiyan, Vishnu Mohan
- Best Film on Social Issues: Anunaad - The Resonance
- Best Film on Environment Conservation/Preservation: Aavasavyuham
- Best Children's Film: Gandhi and Co
- Best Audiography (Location Sound Recordist): Arun Asok & Sonu K P, Chavittu
- 'Best Audiography (Sound Designer): Aneesh Basu, Jhilli
- Best Audiography (Re-recordist of the final mixed track): Sinoy Joseph, Sardar Udham
- Best Choreography: Prem Rakshith, RRR
- Best Cinematography: Avik Mukhopadhayay, Sardar Udham
- Best Costume Designer: Veera Kapur Ee, Sardar Udham
- Best Special Effects: Srinivas Mohan, RRR
- Best Production Design: Dmitrii Malich and Mansi Dhruv Mehta, Sardar Udham
- Best Editing: Sanjay Leela Bhansali, Gangubai Kathiawadi
- Best Make-up: Preetisheel Singh, Gangubai Kathiawadi
- Best Stunt Choreography: King Soloman, RRR
- Special Jury Award: Shershaah, Vishnuvardhan

SC refers electoral bonds case to 5-judge Constitution Bench

[Association For Democratic Reforms & Anr. Vs Union Of India Cabinet Secretary and & Ors.]

Bench of Chief Justice of India (CJI) DY Chandrachud and Justices Sanjiv Khanna, BR Gavai, JB Pardiwala and Manoj Misra

- 5-judge Constitution bench hearing the pleas challenging the validity of the electoral bonds scheme due to the importance of the issue.
- The Supreme Court reserved its verdict in the batch of pleas challenging the legal validity of the electoral bonds scheme that allows anonymous donations to political parties.
- Bench before reserving its verdict, also asked the Election Commission of India (ECI) to submit data up till September 30 this year regarding electoral bonds sold under the scheme.
- In April 2019, the Supreme Court had directed all the political parties to disclose details of the donations received by them through electoral bonds to the ECI. The Court has now directed the ECI to collate such data for a further period until September 30, 2023.
- The electoral bonds scheme allows donors to anonymously send funds to a political party after buying bearer bonds from the State Bank of India (SBI).
- An electoral bond is an instrument in the nature of a promissory note or bearer bond which can be purchased by any individual, company, firm or association of persons provided the person or body is a citizen of India or incorporated or established in India.
- The bonds, which are in multiple denominations, are issued specifically for the purpose of contributing funds to political parties in its existing scheme.
- Electoral bonds were introduced through the Finance Act, 2017, which in turn amended three other statutes - the RBI Act, the Income Tax Act and the Representation of People Act.
- The Finance Act was passed as a money bill, which meant that it did not require the assent of the Rajya Sabha.
- Association of Democratic Reforms (ADR) an Indian Non-governmental Organization (NGO) established in 1999 situated in New Delhi.
- Between 2016-17 and 2021-22, the seven national parties and 24 regional parties received a total donation of ₹9,188.35 crore from Electoral Bonds.
- The highest donations from Electoral Bonds, totaling ₹3,438.8237 crore, were received in 2019-20, the year of the general elections.
- State Bank of India (SBI) issues the bonds in denominations of Rs 1,000, Rs 10,000, Rs 1 lakh, Rs 10 lakh, and Rs 1 crore.

Delhi High Court ordered AIIMS to constitute board to examine whether a 22-week pregnant woman can abort

[Mrs. B v. The Union of India & Anr.]

[Justice Subramonium Prasad]

- Medical Board would be necessary for considering as to whether it would be safe for the woman to undergo the procedure for termination of pregnancy by a registered medical practitioner and also to ascertain the conditions of the foetus.
- The High Court was hearing a plea by a 31 year old married woman, who said she had decided to file for divorce and, therefore, does not want to continue with her pregnancy.
- Abortion Law in Inida:
- In India abortion is regulated by Medical Termination of Pregnancy Act.
- The Medical Termination of Pregnancy Act of 1971 bars *unmarried women* from terminating pregnancies which are up to *24-weeks old*.
- Medical Termination of Pregnancy Act of 1971 and its Rules of 2003 prohibit unmarried women who are between *20 weeks to 24 weeks* pregnant to abort with the help of registered medical practitioners.
- The latest amendment to the MTP Act was made in 2021.
- Until the 1960s, abortion was illegal in India and a woman could face three years of imprisonment and/or a fine under Section 312 of the Indian Penal Code (IPC).
- Based on the report of the *Shantilal Shah Committee*, a medical termination bill was introduced in Lok Sabha and Rajya Sabha and was passed by Parliament in August 1971.
- Medical Termination of Pregnancy (MTP) Act, 1971 act allowed pregnancy termination by a medical practitioner in two stages:
  - A single doctor's opinion was necessary for abortions up to 12 weeks after conception.
  - For pregnancies between 12 to 20 weeks old, the opinion of two doctors was required to determine if the continuance of the pregnancy would involve a risk to the life of the pregnant woman or of grave injury to her physical or mental health or if there is a substantial risk that if the child were born, it would suffer from such physical or mental abnormalities as to be seriously "handicapped" before agreeing to terminate the woman's pregnancy.
- In 2021, Parliament amended the law to allow for abortions based on the advice of one doctor for pregnancies up to 20 weeks.
- The modified law needs the opinion of two doctors for pregnancies between 20 and 24 weeks.
- Further, for pregnancies between 20 and 24 weeks, rules specified 7 categories of women who would be eligible for seeking termination u/s 3B of rules prescribed under the MTP Act,
  - Survivors of sexual assault or rape or incest
  - Minors
  - Change of marital status during the ongoing pregnancy (widowhood and divorce)
  - Women with physical disabilities (major disability as per criteria laid down under the Rights of Persons with Disabilities Act, 2016)
  - Mentally ill women including mental retardation
  - The foetal malformation that has a substantial risk of being incompatible with life or if the child is born it may suffer from such physical or mental abnormalities to be seriously handicaped
  - Women with pregnancy in humanitarian settings or disasters or emergencies may be declared by the Government.

The Indian Himalayan Region needs its own EIA[Editorial]

- The Teesta dam breach in Sikkim in early October and the recent floods and landslides in Himachal Pradesh are a stark reminder of the havoc our development model is wreaking on our environment and ecology especially in the mountains.
- The basis of the EIA Environment Impact Assessment (EIA) is a process defined by the United Nations Environment Programme (UNEP) as a tool to identify the environmental, social, and economic impacts of a project before it is implemented.
- This tool compares various alternatives for the proposed project, predicts and analyses all possible environmental repercussions in various scenarios.
- The EIA also helps decide appropriate mitigation strategies.
- In India, a precursor to the EIA began in 1976--77 when the Planning Commission directed the Department of Science and Technology to assess the river valley projects from the environmental point of view.
- It was later extended for all those projects that required approval from the Public Investment Board.
- On January 27, 1994, the Union Ministry of Environment, Forests and Climate Change under the Environment (Protection) Act 1986 (EPA), promulgated the first EIA notification making Environmental Clearance (EC) mandatory for setting up some specified new projects and also for expansion or modernisation of some specific activities.
- The notification of 1994 saw 12 amendments in 11 years before it was replaced by the EIA 2006 notification.

- The hallmark of the 2006 notification was the decentralisation of the process of EC.
- State governments were also given powers to issue EC in certain cases.
- The Union Ministry of Environment, Forests and Climate Change floated a draft EIA in 2020 for public comments which created quite a furore as it was perceived to be pro industry and compromising the ecological concerns.
- The EIA 2006 notification lays down the procedure as well as institutional set-up to give environmental clearance for the projects that need such clearance as per this notification.
- This notification has categorised projects under various heads such as mining, extraction of natural resources and power generation, and physical infrastructure.
- Unfortunately, the threshold limits beyond which EIA is warranted for all these projects is the same across the country.
- Despite all levels of government being acutely aware of the special needs of the Indian Himalayan Region (IHR), the region's vulnerabilities and fragility have not been considered separately.
- Even the draft 2020 notification which was floated for public discussion does not treat the IHR differently than the rest of the country and is not cognisant of the special developmental needs of IHR.
- The Indian regulatory system uses a graded approach, a differentiated risk management approach depending on whether a project is coming up within a protected forest, a reserved forest, a national park, or a critical tiger habitat. The stringency of environmental conditions proposed in the terms of references at the scoping stage of the EIA process is proportional to the value and sensitivity of the habitat being impacted by the project.
- One unfortunate miss from this graded approach for differentiated risk management has been the IHR. Despite its special needs and as an area of immense ecological importance to the entire country (it serves as a water tower and the provider of ecosystem services), this region is treated like any other part of the country.
- We have enough systemic understanding that the Himalayas are inherently vulnerable to extreme weather conditions such as heavy rains, flash floods, and landslides and are seismically active. Climate change has added another layer of vulnerability to this ecosystem. Despite this understanding of the fragility and vulnerability of the Himalayas, there is no mention of a different set of environmental standards needed if the project is located in the IHR.
- The needs of these mountains could be addressed at all four stages of the EIA — screening, scoping, public consultation, and appraisal — if the yardstick for projects and activities requiring EC in mountainous regions is made commensurate with the ecological needs of this region.
- There is no regulator at the national level, as suggested by the Supreme Court of India in 2011 in Lafarge Umiam Mining (P) Ltd.; T.N. Godavarman Thirumulpad vs Union of India to carry out an independent, objective and transparent appraisal and approval of the projects for ECs and to monitor the implementation of the conditions laid down in the EC.
- The EIA process now reacts to development proposals rather than anticipate them.
- In many cases, the EIA is done in a 'box ticking approach' manner, as a mere formality that needs to be done for EC before a project can be started.

The world needs to stop taking water for granted:Editorial

- Theme for **World Food Day (October 16)** 2023 — **"Water is Life, Water is Food"** — calls for urgent action in managing water wisely.
- Countries face severe challenges such as drought, floods, unseasonal rains and prolonged dry spells.
- With less than 7 years left to achieve the UN Sustainable Development Goals (SDGs), the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD) and the United Nations World Food Programme (WFP) — the UN's food agencies — lay stress on the need to adopt innovative and collaborative approaches for improved management, conservation and availability of scarce water resources.
- Water availability affects every aspect of human life, especially food and nutrition security. For instance, about 60% of India's net sown area is rainfed, contributing to 40% of the total food production.
- However, rainfed agriculture depends directly on water availability, and rain and soil moisture variations can severely affect food and nutrition security.
- Sustainable water management is critical to address the impending food and nutrition security threats.
- Decades of poor water management, misuse and pollution, and the climate crisis have degraded freshwater supplies and ecosystems, adding to the vulnerability of small-scale producers to climate shocks and land degradation in some of the world's most fragile ecosystems.
- About 40% of the planet's total land area is degraded, leaving farmers with less productive land.
- The Government of India has assessed the impact of climate change in 2050 and 2080 using climate projections and crop simulation models. Without adaptation measures, rainfed rice yields in India are projected to reduce by 20% in 2050, and

by 47% in 2080 scenarios, while irrigated rice yields are projected to decline by 3.5% in 2050 and 5% in 2080 scenarios. Wheat yields are projected to decrease by 19.3% in 2050 and 40% in 2080, while kharif maize yields could decline by 18% and 23%.

- Andhra Pradesh Farmer Managed Groundwater Systems project reached out to 638 habitations in seven drought prone districts, that included a hydrological monitoring programme.
- The UN's food agencies work closely with the Government of India and State governments on innovations such as Solar 4 Resilience, Secure Fishing, and the revival of millets for renewable energy promotion, food security and nutrition.

The UN approved Kenya-led security mission to Haiti

United Nations Security Council (UNSC) has approved the Multinational Security Mission (MSS), led by Kenya, to restore security, protect critical infrastructure and control spiraling violence in Haiti.

- Haiti faced escalating gang violence, causing chaos and suffering throughout the country. A group of gangs known as "G9 and Family" disrupted the main fuel port and the Capital city Port-au-Prince, leading to a nationwide crisis.
- This has resulted in widespread killings of nearly 2,800 people, between October 2022 and June 2023.
- Rise in sexual violence and crimes against women, mass looting and burning of houses have led to the displacement of thousands of people. As per estimates, almost half the population is in need of humanitarian assistance.
- Unlike the Previous UN peacekeeping mission in Haiti that concluded in 2017, this new MSS will not be operated by the United Nations.
- Kenya has volunteered to lead the force, with support from other countries like the Bahamas, Jamaica, and Antigua and Barbuda.
- Haiti is located between the Caribbean Sea and the North Atlantic Ocean. Haiti occupies the western one-third of the island of Hispaniola.
- The Dominican Republic borders Haiti on the eastern side of the island. Haiti's neighbours include Jamaica to the west and Cuba to the northwest.
- Haiti is the world's 1st independent Black-led republic.

Railways develops anti-freeze flush and fuel tanks for journeys in J&K

- The process of linking Kashmir to Kanyakumari, through the new Udhampur--Srinagar--Baramulla Rail Link (USBRL) project, poses a unique challenge to the Railways in maintaining water and fuel in liquid form in subzero temperatures during the winters.
- To circumvent the problem of water freezing in toilets and fuel tanks, engineers at the Rail Coach Factory (RCF) in Kapurthala have designed and implemented indigenous innovations.
- While the LHB coach design is prominently used by the Railways, it did not have temperature control systems.
- The water tank mimics thermoplastic bottles with two walls and an insulation layer of foam in the middle, which traps the air. This will maintain water in liquid form in sub zero conditions from 16 to 20 hours. The water may remain cold but it won't freeze.
- To contain energy loss, geysers will be deployed at the point of use in toilets, where only as much water as is needed by the users will be heated.
- A similar technology is being deployed in the fuel tanks for locomotives by the RCF.

- The 111 km long railway stretch from Katra in Jammu to Banihal in Kashmir is slated to be functional before March 2024.
- The longest tunnel in the project is Tunnel T-49, which is 12.75 kilometers long making it India's longest transportation tunnel.

Preventing Water Freezing: It has designed double-walled composite insulated water tanks with capacities ranging from 450 to 685 liters.

- These tanks have a design similar to thermoplastic bottles, with two walls and a foam insulation layer that traps air.
- This can keep water in liquid form for 16 to 20 hours, even in sub-zero conditions, ensuring toilets and taps function properly.

Dealing with Frozen Supply Pipelines: To prevent water in supply pipelines from freezing, RCF adopted technology from the defense services.

- They are using heated pipes with a distributed heating system covered by insulation. This technology maintains water in a liquid state at temperatures between five to eight degrees Celsius.

[Chungthang Dam of Sikkim Collapsed]

- Chungthang Dam of Sikkim Urja's 1,200- MW Teesta -III hydroelectric project on the Teesta river gave way on October 4, leading to the death of at least 94 people in the downstream areas of Sikkim and West Bengal.
- The devastation has refreshed worries over two of three Indian- assisted, under construction *Mega hydropower projects in Bhutan* — the **1,200-MW Punatsangchhu Stage-I (Puna-I)** and the **1,020-MW Punatsangchhu Stage-II (Puna-II)** and the **660-MW Kholongchu**.
- These projects are estimated to cost **₹21,637.28 crore,** funded by India, benefiting northern and eastern States.
- The flash flood in the Teesta River, triggered by the cloudburst in *Lhonak Lake,* caused the accumulation of huge quantities of water, which turned towards Chungthang Dam, destroying the power infrastructure before moving downstream in spate, flooding towns and villages.
- The Central Electricity Authority (CEA) noted issues with Puna-I and Puna-II projects, causing delays and geological challenges.
- Puna-I faces delays due to the movement of the right bank hill mass in the dam area.
- Puna-II encounters poor geological strata and shear zones.
- The HRT for Puna-I and Puna-II has seen significant progress, but these projects may require expensive design changes.
- Indian agencies failed to assess the fragile Himalayan geology effectively.

Ferry to Sri Lanka plies after 40 years

- PM Modi launches high-speed passenger ferry service between Nagapattinam, India, and Kankesanthurai, Sri Lanka.
- Service resumes after a nearly four-decade gap.
- Modi emphasizes that enhanced connectivity strengthens economic and diplomatic ties between India and Sri Lanka.
- The HSC Cheriyapani began its journey with 50 passengers and 12 crew members.
- Modi and Sri Lankan President Wickremesinghe highlight the diplomatic significance of the ferry service.
- The service is seen as a new chapter in diplomatic and economic ties between the two nations.
- India plans to resume the ferry service between Rameswaram and Talaimannar.
- The ferry service aims to strengthen cultural, commercial, and civilisational ties between India and Sri Lanka.
- The operation of the service will enhance cultural ties between Tamil Nadu and the northern province of Sri Lanka.
- External Affairs Minister S. Jaishankar reaffirms India's "neighbourhood first" policy and its potential benefits for disaster management, maritime security, and ease of business.

PM Modi confirms India's bid to host 2036 Olympics

- PM Modi expresses India's aspiration to host the 2036 Summer Olympics.
- India aims to become the fourth Asian country to host the Games.
- The Prime Minister did not specify which city would host the Olympics.
- Modi emphasizes India's enthusiasm and commitment to making the dream of hosting the Olympics a reality.
- He congratulates Team Bharat for its historic victory against Pakistan in the World Cup in Ahmedabad.
- India is willing to host the 2029 Youth Olympics and seeks continuous support from the IOC.
- Modi highlights the significance of the IOC session happening in India after 40 years.
- Sports hold an essential place in Indian culture and lifestyle.
- India has taken various measures for the development of sports, including events like Khelo India Games.

- Sports are seen as a medium to unite the world and promote peace, progress, and wellness.
- PM Modi officially opens the IOC session in the presence of IOC president Thomas Bach and member Nita Mukesh Ambani.

Ferry service to Sri Lanka is a blow to Lakshadweep

- The new ferry service between Tamil Nadu and Sri Lanka negatively impacts transportation in Lakshadweep.
- Islanders in Lakshadweep had been requesting more passenger vessels for inter-island transport.
- Cheriyapani, a high-speed ferry with a capacity of 150 passengers, was taken out of service within the island group for the Sri Lanka ferry service.
- Previously, there were three high-speed vessels conducting inter-island ferry services with a total capacity of 450 passengers.
- Now, only Valiyapani and Parali remain with a combined capacity of 300 passengers, worsening transportation issues for the islanders.
- High-speed ferries were crucial for reaching the farthest island in the group, Minicoy.
- Apart from these, there are only three intra-island ferries, each capable of carrying 50 passengers, operating in the island group.
- Islanders have expressed frustration with the erratic service of the five ships connecting the island group with Kochi.

Red Fort to host India's maiden art, architecture and design biennale

- Red Fort in the national capital will host India's inaugural art, architecture, and design biennale.
- The India Art, Architecture, and Design Biennale, 2023 (IAADB) is organized by the Union Culture Ministry from December 9 to 15.
- It is expected to be inaugurated by Prime Minister Narendra Modi.
- The week-long festival will feature replicas of landmark Indian buildings and structures, along with uniquely conceptualized daily themes and curated exhibitions.
- Exhibitions will be in both physical and digital forms for an immersive experience, along with interactive installations.
- A coffee table book for each theme will commemorate 75 years of Indian Independence.
- Themes include Doors of India, Gardens of India, Baolis (step-wells) of India, Temples of India, Architectural Wonders of Independent India, Indigenous Design, and Women in Architecture and Design.
- The event will include panel discussions and interactive sessions to raise awareness of India's architectural heritage.
- The National Gallery of Modern Art, National Council of Science Museums, Archaeological Survey of India, Lalit Kala Akademi, Council of Architecture, and the Ministry of Education are involved in curating the exhibition.
- The biennale will also introduce the cultural space at the Red Fort.

Centre seeks inclusion of traditional medicine on WHO's list

- Centre aims to include Ayurveda and related systems in WHO's ICD-11.
- ICD provides a common language for sharing standardized health information globally.
- Module-2 for Ayurveda to be added as a supplementary chapter for traditional medicine conditions.
- Ayush Ministry Secretary expects this addition to occur by next January.
- Inclusion of traditional medicine systems into the classification standard used in conventional medicine.
- Aims to establish evidence-based information and support research in traditional medicine.
- Promotes the integration of traditional medicine into mainstream healthcare and health information systems.
- ICD-11 already includes Module-1 for traditional Chinese medicine.
- Module-2 for Ayurveda will facilitate reporting of adverse events and insurance coverage.
- The Ministry of Ayush actively supports the development of Module-2 for Ayurveda.

How a 6.3 magnitude quake caused another of same intensity

- A 6.3 magnitude earthquake occurred in Afghanistan near the Hindu Kush Mountain range.
- The first earthquake was shallow focus (14 km depth).
- Just 30 minutes later, a second 6.3 magnitude earthquake struck in the same region.
- Both earthquakes resulted from thrust faulting near the far western terminus of the Hindu Kush.
- Four days later, another 6.3 magnitude earthquake occurred in Herat.
- These earthquakes were thrust faults, or reverse faults, caused by horizontal compressive stresses.

- The second earthquake was not considered an aftershock because it had the same magnitude as the first, indicating a separate fault rupture.
- Interactions between multiple continental plates and parallel thrust faults can lead to earthquake sequences.
- Afghanistan experiences frequent earthquakes due to the interaction of the Arabia, Eurasia, and India plates.
- The Pamir-Hindu Kush Mountains in northern Afghanistan see earthquakes at various depths due to subduction and active faults.
- The region experiences a combination of thrust and strike-slip mechanisms in its fault systems.

Egypt is racing to eliminate hepatitis C

- Egypt achieves "gold tier" status in eliminating hepatitis C, the first country to do so according to WHO criteria.
- Criteria for "gold tier" status includes 100% blood and injection safety, 80% diagnosis of people with chronic hepatitis C, and 70% treatment of diagnosed individuals.
- Egypt has diagnosed 87% of people with hepatitis C and provided treatment to 93% of those diagnosed, exceeding WHO targets.
- The "100 Million Healthy Lives" initiative in Egypt significantly reduced the prevalence of hepatitis C from 10% in 2016 to less than 1% in 2019.
- Key interventions in Egypt's success include population-based surveys, an investment case highlighting economic burdens, involving healthcare workers, and reducing treatment costs to less than $50 per patient.
- Hepatitis C infection is unevenly distributed globally, with Europe, South-East Asia, and the Eastern Mediterranean regions accounting for the most cases.
- Unsafe injection practices are a common route of virus spread, but the use of safe injections has reduced new infections.
- In 2019, there were 1.5 million new hepatitis C infections globally, with one-third in the Eastern Mediterranean Region. The worldwide prevalence was 58 million.

How is the IORA a key bloc for India?
IORA's Significance for India

- Member and Vice-Chair: India is a member of IORA and currently holds the Vice-Chair position.
- IORA was conceived as a brainchild of Nelson Mandela, emphasizing socioeconomic cooperation in the Indian Ocean Rim.
- IORA includes 23 member countries from Africa, West Asia, South Asia, South East Asia, Australia, and Indian Ocean littoral states.
- It has 11 dialogue partners, including major global players like China, U.S., and the UK.
- The Indian Ocean region is vital due to a 3rd of the world's population residing there and its role in global trade. It handles 80% of global oil trade, 50% of containerized cargo, and 33% of bulk cargo.
- Intra-IORA trade is significant, accounting for around $800 billion.
- IORA provides a "safe space" for India, avoiding the challenges of big-power rivalries, unlike some other regional groupings.
- IORA's priorities encompass maritime safety and security, trade and investment facilitation, fisheries management, disaster risk management, academic, science, technology, tourism, cultural exchanges, and gender empowerment.
- IORA has a particular focus on climate change and runs a special fund for project grants to members.
- External Affairs Minister S. Jaishankar emphasized the importance of maintaining the Indian Ocean as a "free, open, and inclusive space" and cautioned against "hidden agendas" and unsustainable debt in the region.

Silk Roads at a crossroads

- The 10th-anniversary of the Belt and Road Initiative (BRI) is approaching.
- BRI revitalized railway connections to Europe, invested in Asian ports, and built infrastructure in Africa.
- Concerns raised about debt burdens faced by BRI partners.
- The Chinese government released a White Paper on BRI's commitment to open, green, and clean cooperation with zero tolerance for corruption.
- BRI consists of the land-based Silk Road Economic Belt and Maritime Silk Road.
- India refrained from joining due to opposition to the China-Pakistan Economic Corridor (CPEC).
- BRI is a collection of mostly disparate bilateral projects rather than a monolithic plan.
- Trade with BRI partners grew 6.4% annually, reaching $19.1 trillion between 2013 and 2022.
- BRI 2.0 sees a reduction in lending, with fewer projects in South Asia and more in East Asia, East Africa, and Latin America.
- Focus on strategic sectors like 5G networks, renewable energy, manufacturing in new technologies, and ICT.

- Projects under the BRI are getting smaller but more strategic, with a 48% decline in the average deal size compared to 2018.

Israel's missile defence shield

- Iron Dome: Highly effective missile defense system.
- Hamas attack on October 7: Multi-pronged attack from land, sea, and air.
- Approximately 2,200 rockets fired at Israel.
- Iron Dome's intercept range: 2.5 to 43 miles.
- Developed by Rafael Advanced Defence Systems of Israel.
- Israel has at least 10 Iron Dome batteries deployed.
- Targeting systems track incoming projectiles to intercept those likely to land in populated areas.
- No reliable information on the interception rate during the current conflict.
- Israel's four-layered air defense network: Iron Dome, David's Sling, Arrow II, Arrow III.
- U.S. financial support for Iron Dome development.
- Co-production agreement between Israel and the U.S.
- U.S. Army procured two Iron Dome batteries at a cost of $373 million.
- U.S. Marine Corps evaluating Iron Dome for Medium Range Intercept Capability.
- Ukrainian request for Iron Dome to protect against missile threats.
- Analysis of Iron Dome's efficiency and security breaches on October 7 ongoing.

Centre unveils tradeable Green Credit

- Government introduces the Green Credit scheme for trading environmental incentives.
- Green Credit is earned for specific activities benefiting the environment.
- Eight covered activities include tree plantation, water management, sustainable agriculture, waste management, air pollution reduction, and mangrove conservation.
- Individuals/entities must register activities on a website and get them verified by a designated agency.
- A Green Credit Registry and trading platform will be established.
- Green Credit will be traded on a domestic market platform.
- Aim is to encourage industries and entities to fulfill environmental obligations.
- Independent of carbon credits under the Carbon Credit Trading Scheme.
- Environmental activities may have climate co-benefits.

Israel tells Palestinians to leave northern Gaza

- Israel issues an evacuation order for 1 million people in northern Gaza.
- The UN warns of the calamitous impact of this mass exodus.
- Hamas dismisses the evacuation order, calling it a ploy and urges people to stay.
- Gaza City is included in the evacuation order, causing widespread panic.
- Israel has cut off essential supplies and caused a territory-wide blackout in Gaza.
- The conflict has resulted in over 3,000 casualties on both sides.
- Israel claims Hamas attacked and killed hundreds in southern Israel.
- Hamas reports that 13 hostages, including foreigners, were killed in Israeli airstrikes.
- Israel demands the release of hostages before allowing supplies into Gaza.

Goods exports dipped, but August tally lifts outlook

- Goods exports declined in September, marking the seventh drop in eight months.
- Exports fell by 2.6% to $34.47 billion, hitting a three-month low.
- Imports decreased more significantly by 15% to $53.84 billion in September.
- August's export figures were revised upward by $4 billion to $38.45 billion, showing a 3.88% growth over the previous August.
- This was the first increase after six months of contraction in exports.
- Commerce Secretary Sunil Barthwal is hopeful for sustained growth in goods exports in the second half of 2023-24.
- The revised goods trade deficit for August was $21.65 billion, lower than the earlier reported $24.2 billion.
- In September, the goods trade deficit eased further to $19.37 billion.
- The overall goods deficit for the second quarter of 2023-24 is $59.4 billion, just 5.6% over the first quarter.

- Year-on-year, September's goods trade deficit was 31% lower.
- The first-half tally for the year is $115.9 billion, 17.7% lower than the previous year.
- Oil exports have declined by 17.5% so far this year, while non-oil exports dropped by 6.3%.
- Non-oil and non-gold imports, a proxy for domestic demand, decreased by 10% over the last year.
- Imports remained stable in volume, despite a decline in commodity prices, especially in petroleum and edible oils.
- Exports of gems and jewellery were down by 24.3% in 2023-24, with chemicals and textiles also seeing declines.
- Imports of gold, which rose in price by 8% this year, increased by 9.8%.

Balancing policy

- PM Modi expressed solidarity with Israel after a Hamas attack.
- India has faced terrorism and sympathizes with Israel's victims.
- Concern for the safety of Indian citizens in Israel.
- MEA chartered flights to bring Indians home.
- India supports the Palestinian cause while maintaining strong ties with Israel.
- Shift towards closer bilateral relations with Israel.
- India abhors terrorism but cautions against indiscriminate reprisals.
- India's challenge in balancing its policy amidst the Israel-Hamas conflict.

Triangular contest

- Mizoram's Assembly elections to be held in November with a three-cornered battle.
- Mizoram's politics are less influenced by money and muscle power, more by social service and support of religious and social organizations.
- Mizo National Front (MNF) faces challenges from Indian National Congress and Zoram Peoples' Movement (ZPM).
- Chief Minister Zoramthanga of MNF plays the ethnic card by supporting the Kuki-Zo people and refusing to collect biometric data of Myanmar refugees.
- ZPM focuses on MNF's development record and gains urban support.
- Congress leads rural opposition, concerned about inflation.
- Mizoram is a small but strategically important border State with economic potential.
- Need for development and ethnic solidarity are key election issues.

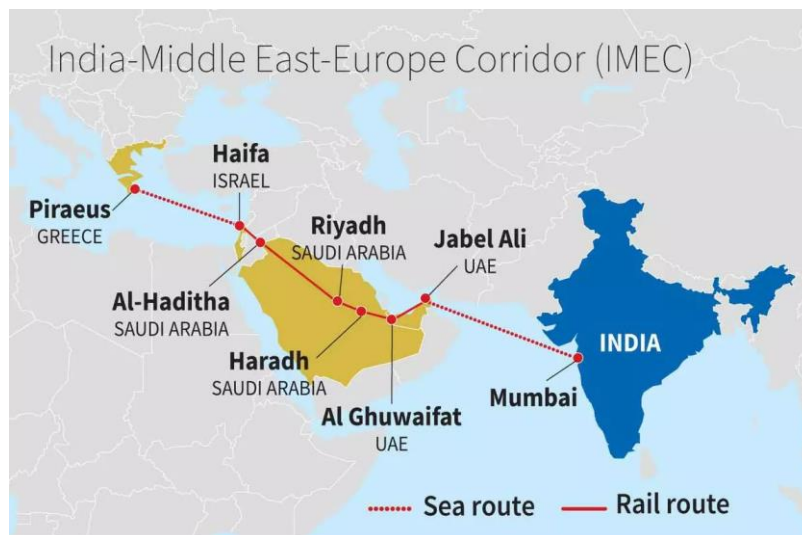## A war that ends the Saudi-Israel 'normalisation' process

- Hamas launched lethal attacks on Israel on October 7, disrupting Israeli efforts to normalize relations with Arab states.
- Israel's Prime Minister, Benjamin Netanyahu, showcased maps at the UN depicting Israel's isolation in 1948 and peace agreements with Arab neighbors.
- Normalization efforts with Saudi Arabia were actively pursued under U.S. auspices.
- Saudi Arabia had three conditions for normalization: approval for a civilian nuclear program, a U.S. security guarantee, and sales of advanced weapons.
- Obstacles included concerns about Saudi nuclear proliferation, human rights issues, and technology transfer.
- Palestinian interests were not considered in the normalization discussions.
- The Gaza war has placed the Palestinian issue at the center of West Asian politics.
- Some writers blame Iran for instigating Hamas attacks to block Saudi-Israel normalization, but Saudi-Iran ties have normalized under Chinese mediation.
- Saudi Arabia now recognizes the importance of addressing Palestinian interests for regional peace and stability.
- Saudi Crown Prince Mohammed bin Salman pledges to stand by the Palestinian people and achieve just and lasting peace.
- Concrete action to serve Palestinian interests is sought.
- Saudi Arabia has pursued its foreign policy independently of U.S. interests, rejecting anti-China and anti-Iran alignments.
- Promoting the Palestinian cause becomes a significant part of Saudi Arabia's foreign policy approach.

Govt. mulls partnerships to make semiconductor chips

- Six working groups advise the Indian government on the AI roadmap.
- Recommendations from the report:
- Public-private partnerships for making semiconductors for AI.
- Leveraging the PPP model to build GPU clusters for Indian startups and researchers.

- AI use cases to cover agriculture, healthcare, education, fintech, security, and governance.
- India Dataset Platform planned for diverse anonymized datasets.
- Draft National Strategy on Robotics circulated for public input.
- Emphasis on robotics for competitiveness, cost-efficiency, and computer vision.
- Fiscal interventions, demonstration facilities, and capacity building recommended for the robotics sector.
- Job losses due to automation seen as a misconception; quality assessment and efficiency benefits highlighted.

'West Asia conflict will not affect IMEC'

- West Asia conflict won't affect India-Middle East-Europe Economic Corridor (IMEC).
- India's Finance Minister, Nirmala Sitharaman, mentioned that the Israel-Palestine conflict was not a significant topic during G20 FMs meeting in Marrakech.
- The conflict has raised concerns about fuel prices, food security, and supply chain disruptions.
- High interest rates may impact investment flows in emerging markets, but these economies are global growth engines and shouldn't be solely influenced by high interest rates.

India-Middle East-Europe Corridor

- India-Middle East-Europe Economic Corridor (IMEC) Project was signed at the G20 Summit in New Delhi, which holds significant geopolitical and economic implications for India.
- The project forms part of the Partnership for Global Infrastructure and Investment (PGII). PGII is a values-driven, high-impact, and transparent infrastructure partnership to meet the enormous infrastructure needs of low and middle-income countries.
- The proposed IMEC will consist of Railroad, Ship-to-Rail networks and Road transport routes extending across two corridors:
  - The *East Corridor – connecting India to the Arabian Gulf*
  - The *Northern Corridor – connecting the Gulf to Europe.*
- The IMEC corridor will also include an electricity cable, a hydrogen pipeline and a high-speed data cable.
- IMEC Signatories: India, the US, Saudi Arabia, UAE, the European Union, Italy, France, and Germany.

Ports to be connected:

  - India: Mundra (Gujarat), Kandla (Gujarat), and Jawaharlal Nehru Port Trust (Navi Mumbai).
  - Middle East: Fujairah, Jebel Ali, and Abu Dhabi in the UAE as well as Dammam and Ras Al Khair ports in Saudi Arabia.
- Railway line will connect Fujairah port (UAE) to Haifa port (Israel) via: Saudi Arabia (Ghuwaifat and Haradh) and Jordan.
  - Israel: Haifa port.
  - Europe: Piraeus port in Greece, Messina in South Italy, and Marseille in France.

Immuno ACT's cell therapy to treat blood cancer gets CDSCO nod

- Immuno ACT's NexCAR19, a CAR-T cell therapy for blood cancer, receives CDSCO marketing authorization.
- The therapy targets CD19 in relapsed/refractory B-cell lymphomas and leukemia.
- Laurus Labs, with a 34% stake in ImmunoACT, has been a key supporter with over $18 million in investment.
- NexCAR19 is a collaborative effort between IIT Bombay and Tata Memorial Centre, putting India on the map for advanced cell and gene therapies.

- The therapy will be made available in partner hospitals soon, marking a significant development in cancer treatment.
- Drug Controller General of India (DCGI) has issued market authorisation to CAR-T (Chimeric Antigen Receptor-T) cell therapy– a breakthrough treatment for some types of cancers developed by IIT-Bombay spin-off company ImmunoACT– paving the way for its commercial launch in the country.
- The therapy, called NexCAR19, has been approved for relapsed-refractory B-cell lymphoma and leukemia.
- The development will offer hope to thousands of blood cancer and lymphoma (cancers of the lymph system) patients in the country who cannot afford to travel abroad to avail the cutting-edge therapy, an advanced form of immunotherapy first launched in the US in 2017.

Palm oil imports rose 29% in Nov-Sept

- Palm oil imports in India increased by 29.2% in the first 11 months of the 2022–23 oil year.
- Total vegetable oil imports in the same period rose by 20%.
- In September, vegetable oil imports declined by 5% compared to the previous year.
- The increase in palm oil imports is attributed to price parity.
- The share of palm oil in total imports rose to 59%.
- European Union (EU) has taken significant steps in recent years to address deforestation and environmental concerns through the EU Deforestation-Free Regulation (EUDR) related to palm oil production and made massive efforts to phase out palm oil-based biofuels by 2030.
- Palm oil is an edible vegetable oil derived from the mesocarp (reddish pulp) of the fruit of the oil palms.
- It is used as cooking oil, and in everything from cosmetics, processed foods, cakes, chocolates, spreads, soaps, shampoo, and cleaning products to biofuel.
- The use of crude palm oil in making biodiesel is being branded as 'green diesel'.
- Indonesia and Malaysia together account for almost 90% of the global palm oil production, with Indonesia producing the largest quantity at over 45 million tonnes in 2021.
- India is the biggest importer of palm oil, which makes up 40% of its vegetable oil consumption. India meets half of its annual need for 8.3 MT of palm oil from Indonesia.

Q1. Consider the following statements:
1. The quantity of imported edible oils is more than the domestic production of edible oils in the last five years.
2. The Government does not impose any customs duty on all the imported edible oils as a special case.

Which of the statements given above is/are correct?

a) 1 only   b) 2 only   c) Both 1 and 2   d) Neither 1 nor 2

Ans: (a)

Q2. Other than resistance to pests, what are the prospects for which genetically engineered plants have been created?
1. To enable them to withstand drought
2. To increase the nutritive value of the produce
3. To enable them to grow and do photosynthesis in spaceships and space stations
4. To increase their shelf life

Select the correct answer using the codes given below:

a) 1 and 2 only   b) 3 and 4 only   c) 1, 2 and 4 only   d) 1, 2, 3 and 4

Ans: (c)

INDIA REITERATES CALL FOR A 'SOVEREIGN PALESTINE STATE'

- Days after the Israel-Hamas war broke, India reiterated its call for the creation of a sovereign Palestinian state.
- Ministry of External Affairs said that there was an obligation to uphold humanitarian principles.
- These statements came as India is sending a chartered flight to bring back Indian nationals under Operation Ajay.

Operation Ajay

- India has launched Operation Ajay to bring back Indians from Israel as the conflict escalated with Israel retaliating against Hamas's attack.
- Operation Ajay is not technically an evacuation operation. It is an operation to repatriate its citizens from Israel.
- There are about 18,000 Indians in Israel, and about 16 in Palestine — a dozen in the West Bank and 3-4 people in Gaza.

- MEA reiterated its traditional position on the Israel-Palestine conflict: India has advocated the resumption of direct negotiations towards establishing a sovereign, independent and viable State of Palestine living within secure and recognized borders, side by side at peace with Israel.

GLOBAL HUNGER INDEX 2023

- India ranked 111th out of 125 countries in the Global Hunger Index-2023.
- India reported the highest Child Wasting rate at 18.7% reflecting acute undernutrition.
- The GHI score is calculated on a 100-point scale reflecting the severity of hunger, where zero is the best score (no hunger) and 100 is the worst.
- India's ranking is based on a GHI score of 28.7 on a 100 point scale. This categorises India's severity of hunger as "serious".
- The country came after neighbouring countries Pakistan (102nd), Bangladesh (81st), Nepal (69th) and Sri Lanka (60th).
- Each country's GHI score is calculated based on 4 indicators.
  - Undernourishment – calculated by the share of the population with insufficient caloric intake.
  - Child stunting – calculated by the share of children under age five who have low height for their age, reflecting chronic undernutrition.
  - Child mortality – Calculated by the share of children who die before their fifth birthday, partly reflecting the fatal mix of inadequate nutrition and unhealthy environments.
  - Child wasting – Calculated by the share of children under age five who have low weight for their height, reflecting acute undernutrition.
- South Asia and Africa south of the Sahara recorded the highest regional hunger levels, both with a GHI score of 27.
- GHI published by Irish NGO Concern Worldwide and German NGO Welt Hunger Hilfe
- In 2022, India ranked 107th out of 121.

Q1. Which of the following is/are the indicator/indicators used by IFPRI to compute the Global Hunger Index Report?
   1. Undernourishment
   2. Child stunting
   3. Child mortality
   4. Select the correct answer using the code given below.
   a) 1 only   b) 2 and 3 only   c) 1, 2 and 3   d) 1 and 3 only
Ans c)

A KEY STEP BY BIHAR TO PROMOTE BETTER SOCIAL JUSTICE

- There are certain dates which acquire greater significance by a stroke of history, and October 2, 2023 is one such date — a day when the Bihar government released the data for a caste based survey, known as the Bihar Jati Adharit Ganana.
- A caste based census would provide accurate and up-to-date data on the distribution and socio economic status of the various castes and communities in India.
- This data is essential for evidence based policy formulation and implementation.
- It can help policymakers identify marginalised and disadvantaged groups and design targeted interventions to uplift them.
- These programmes can be tailored to the specific needs of different caste groups, ensuring that the benefits of government schemes reach the most vulnerable sections of society.
- Caste Based data can help ensure fair representation of marginalised communities in government, education, and employment.
- Reservations and affirmative action policies are often based on caste, and accurate data is crucial to determine the appropriate level of representation required.
- Without accurate data, there is a risk of caste certificates being misused for personal gain or political purposes.
- A caste based census can help verify and authenticate the caste status of individuals, reducing the likelihood of fraud and ensuring that benefits are directed to those who genuinely need them.
- However, it is important to note that the idea of conducting a caste-based census in India has been a subject of debate and controversy. Some argue that it could perpetuate and deepen caste divisions, while others believe that it is necessary to address historical injustices and promote social justice.
- The Indian Constitution recognises the existence of caste based discrimination and inequality and provides for affirmative action measures (such as reservations in education, employment, and politics) to uplift historically disadvantaged groups.

- Discrimination based on caste is a violation of human rights. The government has a responsibility to protect the human rights of all its citizens, which includes the right to equality, dignity, and non-discrimination.
- Caste discrimination often leads to economic disparities, with certain caste groups facing limited access to education and employment opportunities. Government intervention through affirmative action policies can help bridge these gaps and promote economic development for all.
- Discrimination in employment can limit job opportunities for certain caste groups. Government intervention is required to enforce anti-discrimination laws and promote fair employment practices, including affirmative action in the public sector.
- Dalits and other marginalised caste groups have historically been under-represented in political positions.
- Caste discrimination is a deeply ingrained problem in India that requires sustained and committed government intervention to address. Such intervention is not only essential to rectify historical injustices but also to uphold the principles of equality, justice, and human rights for all citizens, regardless of their caste or social background.
- The origin of the Census in India dates back to the colonial exercise of 1881.
- Socio-Economic and Caste Census (SECC) was first conducted in 1931 which aimed to collect information on the economic status of Indian families, both in rural and urban areas, to identify indicators of deprivation.

TAMIL AUTHOR SIVASANKARI CONFERRED 32ND SARASWATI SAMMAN 2022 FOR HER MEMOIR "SURYA VAMSAM"

- The K.K. Birla Foundation presented her with the award, along with a citation, a plaque, and a prize of ₹15 lakh.
- Saraswati Samman is given by the K.K. Birla foundation since 1991.
- The recognized works must have been published in any of the languages included in Schedule VIII of the Indian Constitution within the last 10 years. To date, 32 Saraswati Samman awards have been presented to deserving authors.

Schedule VIII of the Constitution consists of the following 22 languages:

- Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi,Sanskrit, Sindhi, Tamil, Telugu, Urdu, Bodo, Santhali, Maithili and Dogri.
  - Initially 14 languages were included in the Constitution.
  - By 21st Amendment Act of 1967 Sindhi language was added
  - By the 71st Amendment Act of 1992 Konkani, Manipuri, and Nepali were included
  - By the 92nd Amendment Act of 2003 Bodo, Dogri, Maithili, and Santhali were added.
- Senior Hindi poet and writer *Prof. Ramdarash Mishra* has been honored with the *31st Saraswati Samman 2021*.
- The 1st Saraswati Samman was given to Harivanshrai Bachchan.
- The 1st first woman winner of Saraswati Samman was *Balamani Amma.*

UN Security Council reform

- Long standing issue of reforming the United Nations Security Council, emphasizing that the current composition of the Council does not reflect the contemporary global geopolitical landscape.
- The Security Council's composition is based on the realities of 1945, with only 5 permanent members (China, France, Russia, the United Kingdom, and the United States) having veto power. This configuration does not adequately represent the interests and contributions of the majority of UN member states today, and many countries feel left out.
- The imbalance in representation is considered unjust, especially for countries like Japan and Germany, which are among the largest financial contributors to the UN but are not permanent members. It also mentions India as a country that deserves a place on the Security Council given its population, economic significance, and contributions to UN peacekeeping operations.
- Achieving reform of the Security Council is a difficult task due to the high bar set for amending the UN Charter. Any amendment would require a 2/3rd majority of the General Assembly and ratification by 2/3rd of member states, making it challenging to garner sufficient support. Furthermore, existing permanent members are often resistant to any changes that may dilute their influence.
- China opposes the addition of new Asian permanent members, especially India, and Pakistan is against India's candidacy. In Latin America, Brazil's claim to a permanent seat faces resistance from Argentina and Mexico. In Africa, there are competing claims from Nigeria, South Africa, and Egypt. Various proposals, such as creating a category of "semi-permanent members," have failed to gain traction.
- ongoing gridlock in the Security Council has had real-world consequences, such as the Council's inability to respond effectively to crises like the Ukraine conflict, where Russia's veto power obstructed resolutions. Similar obstructionism has

affected proposed reforms to international financial institutions, further highlighting the consequences of the current system's inefficiency.

- Despite its flaws, the importance of the UN as the only global platform for countries to come together and address global challenges. It raises the question of whether the international community can afford to let the UN fade into irrelevance and lose its effectiveness.
- The Security Council was established by the UN Charter in 1945. It is one of the 6 principal organs of the United Nations.
- The other 5 organs of the United Nations are—the General Assembly (UNGA), the Trusteeship Council, the Economic and Social Council, the International Court of Justice, and the Secretariat.
- The council is headquartered at NewYork.
- The council has 15 members: the five permanent members and ten non-permanent members elected for two-year terms.

3.21 lakh appeals pending with Information Commissions

- A report card by voluntary organisation Satark Nagrik Sangathan (SNS) on the performance of information commissions shows that the backlog of appeals and complaints under the Right to Information(RTI) Act have been steadily rising across states.
- The performance report marks the 18th anniversary of RTI law that came into force on October 12, 2005.

Findings of report:

- The data shows that overall over 2.2 lakh appeals and complaints were registered between July 1, 2022 and June 30, 2023 by 28 ICs.
- During the same time period more than 2.14 lakh cases were disposed of by 29 commissions.
- Over 3.2 lakh appeals and complaints were pending as on June 30 this year in 27 ICs.
- The analysis found that six commissions including the Central Information Commission and state ICs of Manipur, Chhattisgarh, Maharashtra, Bihar and Punjab are currently without a chief.
- The CIC is currently working with only four commissioners even as seven posts are vacant.
- Four commissions in Jharkhand, Telangana, Mizoram and Tripura are defunct as no new commissioners have been appointed after the incumbent demitted office.

Central Information Commission (CIC):

- The CIC was established by the Central Government in 2005, under the provisions of the Right to Information Act (2005). It is not a constitutional body.
- Members: It consists of a Chief Information Commissioner and not more than 10 Information Commissioners.
- Appointment: They are appointed by the President on the recommendation of a committee consisting of the Prime Minister as Chairperson, the Leader of Opposition in the Lok Sabha and a Union Cabinet Minister nominated by the Prime Minister.
- Jurisdiction: The jurisdiction of the Commission extends over all Central Public Authorities.
- Tenure: The Chief Information Commissioner and an Information Commissioner shall hold office for such term as prescribed by the Central Government or until they attain the age of 65 years, whichever is earlier.

They are *not eligible for reappointment*.

Power and Functions of CIC:

- To receive and inquire into a complaint from any person regarding information requested under RTI, 2005.
- It can order an inquiry into any matter if there are reasonable grounds (suo-moto power).
- While inquiring, the Commission has the powers of a civil court in respect of summoning, requiring documents etc.

DELHI L-G SANCTIONS ARUNDHATI ROY'S PROSECUTION IN 2010 CASE

- VK Saxena, Delhi Lieutenant Governor has granted sanction for the prosecution of author Arundhati Roy and Sheikh Showkat Hussain, former Professor of International Law at Central University of Kashmir, in a 13-year-old case relating to provocative speeches at a public function in 2010.
- FIR in the matter was registered vide orders dated November 27, 2010, of the Court of Metropolitan Magistrate, New Delhi, According to the statement, a prima facie case was made out against Roy and Hussain for the commission of an offence under sections 153A, 153B and 505 of the Indian Penal Code for their speeches at a public function in the National Capital.
- Sections 153A (promoting enmity between different groups), 153B (imputations, assertions prejudicial to national-integration) and 505 (statements conducing to public mischief) of the Indian Penal Code for their speeches.
- Under Section 196(1) of the Code of Criminal Procedure (CrPC), a valid sanction for prosecution from the state government is a prerequisite for certain offences such as hate speech, hurting religious sentiments, hate crimes, sedition, waging war against the state and promoting enmity among others.

- However, despite a case of sedition being made out, sanction has not been granted under Section 124A of IPC (Sedition) owing to the fact that the Supreme Court on May 5, 2022, in another case has directed that all pending trials, appeals and proceedings with respect to the charge framed under Section 124A (Sedition) of IPC shall be kept in abeyance and thereafter the three-Judge Bench headed by CJI had referred the matter to Constitution Bench on September 12, 2023.
- Sushil Pandit, a social activist from Kashmir, had filed a complaint with SHO, Tilak Marg, Delhi against several persons for allegedly delivering provocative speeches in public at a conference organized by the Committee for the Release of Political Prisoners (CRPP) under the banner of "Azadi - The Only Way", on October 21, 2010.

THE MALDIVES, THE EVOLUTION OF A DEMOCRACY

- Recent presidential election in the Maldives and its implications for the country's democracy and foreign relations.
- Recent presidential election as a sign that democracy is thriving in the Maldives. It emphasizes that the election was free and fair, and it enhances the country's international prestige.
- The main concerns for Maldivian voters, especially young ones, revolved around economic well-being, including employment, housing, improvements in the tourism industry, education, and healthcare.
- Recent leadership transitions in the Maldives, from Maumoon Abdul Gayoom's rule to Mohamed Nasheed's election, followed by Mohamed Waheed Hassan, Abdulla Yameen, and finally, Ibrahim Mohamed Solih, who was the architect of the "India First" policy.
- Reasons for Solih's Defeat: 3 reasons for Ibrahim Mohamed Solih's defeat in the election. First, incumbents have rarely been re-elected in the Maldives. Second, the split within the ruling Maldivian Democratic Party (MDP) and the departure of Mohamed Nasheed played a role. Finally, the MDP was seen as less effective in countering disinformation during the campaign.
- Incoming President, MOHAMED MUIZZU, is backed by an alliance of the Progressive Party of Maldives and the People's National Congress. He is the mayor of the capital city, Male.
- Potential directions for the Maldives' foreign policy, including options to either revert to a more pro-China stance, continue the "India First" policy, or adopt a balanced approach in its relations with key partners like China and India.
- Global context has evolved since Abdulla Yameen's presidency, with changes in the Belt and Road Initiative (BRI), the Sri Lankan financial crisis, and evolving dynamics with the Gulf States.
- India's Role: India's positive role in the Maldives and suggests that India should continue to strengthen its relationship with the country through various means, including regional security cooperation, participation in regional organizations like BIMSTEC, and increased engagement at various levels.
- recent Maldivian presidential election, the reasons for the incumbent's defeat, and the

LADAKH AUTONOMOUS HILL DEVELOPMENT COUNCIL KARGIL (LAHDC-K) ELECTION

- The National Conference (NC)- Congress alliance achieved a significant victory in the Ladakh Autonomous Hill Development Council- Kargil (LAHDC-K) election, countering the efforts of the Bharatiya Janata Party (BJP) to expand its influence in Kargil since it came under the direct rule of the Central government in 2019. This election marked the first political statement made by the Kargil electorate since the reorganization of Jammu and Kashmir in 2019 when Ladakh was granted Union Territory (UT) status, separate from Jammu and Kashmir.
- In the LAHDC-K election, the NC won 12 seats, and the Congress secured 10 seats, out of the 26-member council. The BJP managed to win only two seats. The voter turnout was relatively high at 77.61%, indicating that the local population took these elections seriously. Kargil has a total of 74,026 registered voters, spread across its mountainous terrain.
- In the past four years, both Buddhists and Shia Muslims in Ladakh had collectively protested for special status for Ladakh under the Sixth Schedule of the Constitution. They aimed to safeguard their land, culture, jobs, languages, and environment. There were also demands for reunification with Jammu and Kashmir or full statehood for Ladakh. The BJP had hoped to expand its support in Kargil based on its developmental initiatives, such as infrastructure improvements, new educational institutions, and reserving lower-level jobs for local residents.
- The NC viewed these elections as a referendum on the 2019 reorganization of Jammu and Kashmir, which bifurcated the region into two Union Territories. Congress leader Rahul Gandhi visited Ladakh in August and supported the demands of the Kargil Democratic Alliance (KDA), which includes various socio-political-religious groups advocating for special constitutional guarantees on land and jobs, as well as a separate Lok Sabha seat for Kargil district. Currently, Leh and Kargil together constitute one Lok Sabha seat.
- The message sent by Kargil voters is that the final status of Ladakh remains an emotional issue, and the development efforts alone may not assuage the sentiments of locals without special protections, constitutional recognition, and an elected

Assembly in the region. This election outcome highlights the complex and sensitive nature of the political landscape in Ladakh and the continuing demands for special status and safeguards by different communities in the region.

IMF RAISES INDIA'S FY24 GDP GROWTH FORECAST TO 6.3%

- The International Monetary Fund (IMF) lifted its 2023-24 growth projection for India to 6.3% from its July estimate of 6.1%, citing *"stronger-than-expected consumption"* during the June quarter.
- In contrast, the IMF expects *global growth of 3% in 2023* and 2.9% in 2024, with advanced economies expanding by 1.5% in 2023 and 1.4% in 2024.
- IMF's growth estimate for India is a notch below the *Reserve Bank of India's (RBI) forecast of 6.5%* gross domestic product (GDP) growth in the current fiscal.
- The Indian economy recorded a 7.8% growth during the June quarter. Capital formation, a proxy for investments, and private consumption expenditure, an indicator of consumption demand, reported growth rates of 8% and 6%, respectively, during this period. The gross goods and service tax (GST) revenue, an indicator of consumption, collected during June rose 12% annually to ₹1.6 trillion.
- Other multilateral agencies, such as the *Asian Development Bank (ADB), expect India to grow 6.4% during 2023-24.*
- From the Indian perspective, RBI has kept the repo rate unchanged at 6.5% since April after raising it by 250 basis points (2.5%) since May 2022. RBI's decision has come against the backdrop of rising inflation. India's retail inflation fell to 6.83% in August from a 15-month high of 7.44% in July due to the easing of food prices.

Claudia Goldin wins 2023 Economics Nobel Prize for research on workplace gender gap

- Claudia Goldin won the 2023 Economics Nobel Prize.
- Her research focuses on the gender gap in the labor market.
- She is the third woman out of 93 economics laureates to win the prize.
- Goldin's research spans 200 years of women's participation in the workplace.
- Despite economic growth, women's pay hasn't consistently caught up to men's.
- She emphasizes the need to address the intersection of family, home, and employment.
- Goldin's research identifies the source of the gender pay gap and how it has changed over time.
- Policymakers can use her work to tackle the issue.
- Women often take jobs that allow them to balance work and home responsibilities, leading to lower pay.
- Achieving gender equality requires addressing issues in both the workplace and the home.
- Young girls' career decisions are influenced by their mothers' experiences.
- The slow change in labor market gender gaps is due to generational learning and evaluation of prospects as times change.

Mental health and the floundering informal worker

- World Mental Health Day theme for 2023: "mental health as a universal human right."
- Informal workers often overlooked in mental health discussions.
- International Labour Organization (ILO) study: 15% of working-age adults globally have a mental disorder.
- Decent work positively influences mental health, while unemployment, unstable employment, discrimination, and unsafe working conditions can harm it.
- In India, over 90% of the workforce is informal, facing precarious conditions, discrimination, and lack of social protections.
- Gender disparities are pronounced, with over 95% of working women engaged in low-paying, precarious employment.
- Youth unemployment is high in India, impacting mental health negatively.
- Young workers shifting to precarious and informal work due to desperation.
- nemployment rate increases with educational levels, particularly for educated young women.
- India's aging population lacks social security, impacting their mental health.
- Elderly people working post-retirement in informal jobs face economic dependency and poor access to healthcare.
- Informal workers face mental distress due to debt and rising healthcare costs.
- Employment guarantee programs can improve mental health outcomes.
- India's Code on Social Security 2020 lacks clear goals for universal social security.
- Budgetary allocation for mental health in India is less than 1% of the total health budget.
- Strengthening community-based care and human rights-oriented care is crucial for mental health.
- Proactive policies are needed to address mental health, aligning with Sustainable Development Goals (SDGs) on good health and decent work.

The end of the two state solution

- Historically, the two-state solution, dividing the land between the Jordan River and the Mediterranean Sea into two countries, was considered the most viable solution to the Jewish-Arab conflict.
- Jews generally accepted partition, while many Arabs rejected it.
- In recent decades, the situation has seemingly reversed, with support for a two-state solution from some Palestinian leadership, the Arab world, and the West, while Israel has hesitated.
- The key stakeholder in this conflict is the Israeli public because their agreement is necessary for any solution.
- The recent attacks by Hamas on Israel have raised questions about whether this will push the Israeli public to support the creation of a sovereign Palestinian state.
- Some believe that the trauma of these attacks will make Israelis see a Palestinian state as a prerequisite for peace, while others fear that it may lead Israelis to conclude that an independent Palestine would threaten Israel's security.
- Hamas's stance is that it does not recognize Israel's right to exist and seeks its destruction.
- The recent attacks were directed at Israel's very existence as a Jewish state.
- The Palestinian Authority's support for Hamas has heightened Israeli fears that a two-state solution might lead to a single Palestinian state, rather than two states living side by side.
- The central obstacle to a two-state solution has been Palestinians' inability to convince Israeli voters that they would leave the Jews in peace if given sovereignty.
- A radical Israeli fringe once marginalized is now part of the ruling coalition, reflecting growing distrust among Israeli voters of Palestinians as peace partners.
- Palestinians have hoped that Israeli civilians would share their pain to force an end to the occupation, but from the Israeli perspective, violence has made them less likely to consider ending the occupation.
- Hamas's recent attacks will further increase Israeli suspicions about Palestinian intentions with sovereign state power.
- Palestinians need to convince Israeli voters that a future Palestine will coexist peacefully with Israel, but the challenge is immense.
- The only way forward is for Palestinian leadership to credibly signal to Israelis that they won't use their freedoms to harm Israel, but the prospects for this seem dim.

The state of India's Scheduled Areas

- India has 705 Scheduled Tribe (ST) communities, constituting 8.6% of the population, living in 26 States and 6 Union Territories.
- Article 244 of the Indian Constitution is crucial for STs and provides for the administration of Scheduled and Tribal Areas.
- Scheduled Areas cover 11.3% of India's land area and exist in 10 states.
- However, despite demands from Adivasi organizations, many villages in these Scheduled Areas and other states with ST populations are left out, denying them rights under laws applicable to Scheduled Areas.
- The President of India notifies Scheduled Areas, and states with Scheduled Areas must establish a Tribal Advisory Council to advise the Governor on ST welfare.
- The national government can give directions to the states regarding the administration of Scheduled Areas, and the Governor can make regulations for these areas.
- The identification of Scheduled Areas is an executive function, and there are no specific criteria in the Constitution or laws.
- The guiding norms for declaring an area as a Scheduled Area include tribal population, compactness, administrative viability, and economic backwardness.
- PESA (Panchayats Extension to Scheduled Areas Act) in 1996 empowered gram sabhas in Scheduled Areas for self-governance.
- The FRA Act (Scheduled Tribes and Other Traditional Forest Dwellers Act) adopted similar definitions, expanding the concept of a village.
- Demarcation of traditional or customary boundaries is essential for effective governance.
- Expanding Scheduled Areas to include habitations with ST majorities and demarcating customary boundaries is needed for effective governance.
- A reevaluation of geographical limits for revenue villages, panchayats, talukas, and districts is necessary to ensure full coverage of Scheduled Areas.

What is multimodal artificial intelligence and why is it important?

- Multimodal AI systems allow users to engage with AI through various modalities, such as images, sounds, videos, and text.

- Multimodal AI aims to mimic human cognition by incorporating multiple modes of information processing.
- OpenAI has enabled its GPT-3.5 and GPT-4 models to study images and analyze them in words, along with adding speech synthesis to its mobile apps for full-fledged conversations.
- Google is also developing a multimodal large language model called Gemini, leveraging its extensive image and video database.
- Multimodal AI combines different modalities, like text and images, to generate outputs based on user input.
- Examples of multimodal AI models include DALL.E, which generates images from text prompts, and Whisper, an open-source speech-to-text translation model used for voice processing.
- Applications of multimodal AI include automatic image caption generation, hate speech detection in social media, predicting dialogue lines in videos, and medical image analysis.
- Future multimodal AI systems may incorporate additional sensory data, like touch, smell, and brain signals, for more immersive experiences.
- Industries like autonomous driving, robotics, medicine, and speech translation benefit from multimodal AI systems.
- Meta's ImageBind is an example of an open-source AI multimodal system that integrates text, visual data, audio, temperature, and movement readings.

Smart fence along Myanmar border in the pipeline: govt.

- Advanced smart fencing system of 100 km along Myanmar border planned to strengthen surveillance.
- Ethnic violence in Manipur partly attributed to unfenced border and unregulated migration from Myanmar.
- In 2022, 137 insurgency-related incidents out of 201 were registered in Manipur.
- Manipur affected by various insurgent groups, with 23 outfits under Suspension of Operation (SoO) pact since August 2008.
- Free Movement Regime (FMR) exists between India and Myanmar, allowing certain border residents to cross with a border pass.
- Manipur suspended FMR since 2020 due to the COVID-19 pandemic.
- Manipur Chief Minister requested the cancellation of FMR and completion of fencing along the Myanmar border.
- India shares a 1,643 km border with Myanmar, with 1,472 km already demarcated.

Sri Lanka to take over as Chair of Indian Ocean Rim Association

- Sri Lanka is set to take over as the Chair of the Indian Ocean Rim Association (IORA).
- The IORA Council of Ministers meeting will be held in Colombo on October 11, 2023, with the participation of several foreign ministers, including those from India, Bangladesh, Mauritius, Iran, Malaysia, and South Africa.
- Sri Lanka's Foreign Minister Ali Sabry will chair the Council for the next two years, succeeding Bangladesh's Foreign Minister, who is the current Chair.
- The Council will discuss cooperation in six priority areas identified by the IORA: Trade and Investment, Maritime Safety and Security, Fisheries Management, Disaster Risk Management, and Blue Economy.
- The IORA is an intergovernmental organization of states located around the Indian Ocean, with 23 member states and 11 dialogue partners.
- Sri Lanka's participation in the IORA is significant, given its strategic location in the Indian Ocean Region and its involvement along with other regional countries like Pakistan, Myanmar, Bangladesh, Nepal, and Afghanistan.
- There are reports of a possible visit by the Chinese research vessel Shi Yan 6 to Sri Lanka, which has raised concerns from India and the U.S., and Sri Lanka's government is yet to clear the visit.
- India and Sri Lanka are launching a long-pending ferry service to enhance connectivity, connecting Nagapattinam in Tamil Nadu with Kankesanthurai in the Northern Province of Sri Lanka.

Israel- palestine confrontation

- The Conflict dates back to the late 19th and early 20th centuries when Jewish and Arab nationalist movements emerged in response to the decline of the Ottoman Empire and the colonial era.
- The Balfour Declaration of 1917, issued by the British government, expressed support for the establishment of a "national home for the Jewish people" in Palestine, which was then under Ottoman rule. It is linked to the age-old tussle over identity and land starting with Jerusalem.

Post-World War II:
- After World War II and the Holocaust, Jewish survivors and refugees sought to establish a Jewish state. In 1947, the United Nations proposed a plan to partition Palestine into separate Jewish and Arab states

- With Jerusalem as an international city. The UN plan was accepted by Jewish leaders but rejected by Arab leaders, leading to the **1947-1949 Arab-Israeli War.**

Establishment of Israel:

- In 1948, the State of Israel was established, leading to the displacement of hundreds of thousands of Palestinian Arabs who fled or were expelled from their homes. This event is referred to as the Nakba (Arabic for "catastrophe") by Palestinians.
- Key issues include the borders of Israel and a future Palestinian state, the status of Jerusalem (claimed as a capital by both sides), the rights of Palestinian refugees, and security concerns.
- Jerusalem is a critical and highly contentious issue in the conflict. Both Israelis and Palestinians have deep historical and religious ties to the city, and it is seen as a symbol of national identity. The status of Jerusalem, particularly East Jerusalem, which was captured by Israel in 1967, has been a major point of contention. The Palestinian desire to establish East Jerusalem as the capital of a future Palestinian state clashes with Israel's assertion of Jerusalem as its "unified, eternal capital."
- Settlements: The expansion of Israeli settlements in the West Bank, including East Jerusalem, has been a significant obstacle to peace negotiations. The construction of settlements is viewed by many as a violation of international law and a hindrance to the establishment of a viable Palestinian state.
- Al-Aqsa Mosque: The Al-Aqsa Mosque is a highly revered site in Islam, and any actions perceived as threats to its sanctity can lead to widespread anger and protests, not only in the region but also among Muslims worldwide. Incidents at the Al-Aqsa Mosque have historically been triggers for violence.

Unlawful Activities Prevention Act Invoked Against news portal "NewsClick",

- NewsClick facing allegations of receiving illegal funding from China aimed at propagating Chinese propaganda, routed through the United States.
- The Enforcement Directorate had accused the company of money laundering, claiming that the portal received ₹77 crore as foreign remittance between the years 2018-21.
- Prabir Purkayastha, editor of the NewsClick website, was arrested under an anti-terrorism law on Tuesday over allegations of receiving foreign money.
- NewsClick is an English-language news website and is an independent and critical outlet with a focus on "progressive movements". It was founded in 2009 by Purkayastha, who was also previously arrested during a state of emergency imposed by the then-Prime Minister Indira Gandhi in 1975.
- NewsClick founder-editor Prabir Purkayastha and Human Resources head Amit Chakraborty Monday moved the Supreme Court challenging the Delhi High Court's verdict dismissing his plea against arrest by Delhi police in a case lodged under anti-terror law the Unlawful Activities (Prevention) Act.
- The High Court had rejected their contention they should have been provided the grounds of arrest when apprehended by police and said the UAPA does not mandate furnishing written grounds and only speaks of the accused being "informed" about the reasons for arrest, but added that it would be "advisable" that the police henceforth provide the grounds of arrest in writing to an accused after redacting "sensitive material".

Indian Air Force unveils new Ensign as it marks its 91st anniversary

- To mark its the 91st anniversary of Indian Air Force, a new IAF ensign will be unveiled on the occasion of Indian Air Force Day on 8 oct.
- The new IAF ensign will be unveiled by Chief of Air Staff Air Chief Marshal VR Chaudhari at the IAF day parade in Prayagraj on Sunday. The new ensign will include the Air Force Crest in the top right corner of the Ensign, towards the fly side.
- During the British era, Indian Air Force was known as the Royal Indian Air Force. Its ensign consisted of the Union Jack in the upper left canton and the RIAF roundel (Red, White & Blue) on the fly side. Post-Independence, the Indian Air Force ensign was created by replacing the Union Jack with the Indian tricolour and the RAF roundels with the IAF tri-colour roundel in the lower right canton.
- The IAF Crest has the national symbol, the Ashoka lion on the top with the words "Satyameva Jayate" in Devanagari below it. Below the Ashoka lion is a Himalayan eagle with its wings spread, denoting the fighting qualities of the IAF. A ring in light blue colour encircles the Himalayan eagle with the words "Indian Air Force".
- The motto of the IAF "Nabha Sparsham Deeptam" is inscribed below the Himalayan eagle in golden Devanagari.
- The IAF motto has been taken from verse 24, Chapter 11 of the Bhagavad Gita and means "Radiant Thou Touchest Heaven" or in other words "Touching the sky with Glory".
- The Indian Air Force was officially established 8 October, 1932. In view of its professional efficiency and achievements during World War II, the force was bestowed with the prefix "Royal" in March 1945. So, it became the Royal Indian Air Force (RIAF).

Unraveling the links between consanguinity and genetic diseases

- Practice of consanguinity, which involves marrying close relatives, and its impact on human genetics and health.
- The practice of consanguinity is still widespread in many human societies, with an estimated 15-20% of the world's population engaging in inbreeding, particularly in Asia and West Africa.
- Consanguinity has both genetic and social dimensions. Socially, it refers to marriage between blood relatives, while genetically, it involves marriage between individuals who share a close genetic relationship, leading to inbreeding.
- There is historical and genetic evidence suggesting that ancient civilizations, like the Egyptians and Incas, practiced consanguinity. For instance, it is believed that King Tutankhamun of Egypt was born to parents who were blood relatives.
- Scientists have used consanguineous populations, including endogamous groups in India, the Ashkenazi Jews, and the Amish, to study the effects of inbreeding on human genetics and health. High levels of inbreeding have been associated with an increased risk of recessive genetic diseases and higher mortality rates.
- While consanguinity is detrimental among humans, it is a common practice in breeding plants and animals to eliminate deleterious genetic alleles. In experimental settings, mating between related offspring has been used to improve genetic traits.
- Researchers use measures like runs of homozygosity and autozygosity to understand the genetic history of populations and the extent of consanguinity. Advances in genomics have enabled more precise assessments of kinship between individuals.
- Research on consanguineous populations has led to the identification of new genetic diseases and has helped estimate genetic predispositions to common diseases. However, the relationship between consanguinity and complex diseases like type-2 diabetes, obesity, and hypertension is still being investigated.
- Advances in genomics research are expected to offer innovative solutions to mitigate the risks associated with consanguinity on genetic diseases. This could lead to a future where personalized medicine, genetic diagnostics, and genetic counseling play a vital role in improving the health outcomes of affected individuals and their families.
- Thus, Practice of consanguinity has significant genetic and health implications, and ongoing research in genomics holds the promise of better understanding and addressing the challenges associated with inbreeding.

GST Council affirms 28% tax on online betting from Oct.1

- GST Council confirmed 28% tax on online betting from October 1.
- Tax rates on certain millet-based products were lowered.
- Age-related norms for members of GST Appellate Tribunals were adjusted.
- Taxation rights on extra neutral alcohol were given to the States.
- 28% levy on bets in online gaming, casinos, and horse racing remains, even if 13 States haven't passed enabling laws.
- Notices for tax recovery up to September 30 were based on existing law for betting activities.
- Concerns raised about the impact on the gaming industry and young workforce.
- 18 States have amended their GST laws to impose the 28% gaming levy.
- No discussion on GST rate rationalization despite higher GST revenues.
- Council to plan a perspective on imposing a cess or surcharge on top of GST levies after March 2026.
- Clarifications and tweaks made to tax rates on some goods and services.
- Treatment of guarantees issued by directors for corporate loans clarified, not attracting GST.
- Guarantees issued by companies to subsidiaries will attract 18% GST on 1% of the guarantee offered or actual consideration, whichever is higher.
- Taxpayers granted an additional window till January 31, 2024, to file appeals against pending cases filed by the Revenue Department till March 2023, with a slightly higher pre-deposit of disputed tax levy.

ISRO plans Gaganyaan unmanned flight tests, gears for abort mission

- ISRO is planning unmanned flight tests for the Gaganyaan mission.
- Preparations for the Flight Test Vehicle Abort Mission-1 (TV-D1) are underway.
- The abort mission aims to demonstrate the performance of the crew escape system.
- The abort mission is expected to take place by October-end from the Satish Dhawan Space Centre (SDSC) in Sriharikota.
- The crew module (CM) for the Gaganyaan mission is in different stages of development.
- The CM for TV-D1 is an unpressurized version, ready for shipping to the launch complex.
- The CM houses various systems for deceleration and recovery and is extensively instrumented to capture flight data.
- The test vehicle for TV-D1 is a single-stage liquid rocket.
- The flight will simulate the abort condition during the ascent trajectory at a Mach number of 1.2.

- Crew escape systems (CES) with CM will be separated from the test vehicle at an altitude of about 17 km.
- The CM will be recovered in the Bay of Bengal, 10 km from the coast of Sriharikota.
- The success of this test flight is a significant milestone for the Gaganyaan program.
- The Gaganyaan mission aims to launch three crew members to low earth orbit and safely return them to earth.
- Four pilots are undergoing training at the Astronaut Training Facility in Bengaluru for the mission.

Ganga-Ghagra basin canals pose a threat to dolphins

- 19 Gangetic river dolphins were rescued from the irrigation canals of the Ganga-Ghagra basin in Uttar Pradesh between 2013 and 2020.
- The publication provides details on the capture and relocation methods used in the rescue operations.
- It describes the behavioral and demographic information of the rescued dolphins.
- 24 rescue operations were conducted during this period, with five dolphins unfortunately dying.
- Of the rescued dolphins, 14 were identified as female and 10 as male, with a total body length ranging from 128 cm to 275 cm.
- Dams and barrages in the area have severely affected the dolphin's habitat, pushing them into irrigation canals where they face various risks, including rapidly receding waters, heat stroke, and human interference.
- The Ganges river dolphin is classified as "endangered" on the IUCN Red List and is protected under Indian Wildlife (Protection) Act 1972 and international conventions.
- The researchers noted observations of adult male and female dolphins together, as well as adult females with calves, suggesting a preference for living and hunting in groups or pods.
- The straying of dolphins into canals is related to the release of water during or after the monsoon season, with over 70% of entrapments reported during these times.
- The rescue of dolphins requires expertise due to their delicate nature, and keeping them alive after rescue is a challenge.
- The authors of the paper include Shailendra Singh, Arunima Singh, Sreeparna Dutta, and Sanjay Srivastava, a senior forest official of the Uttar Pradesh cadre.

Now a more efficacious, inexpensive malaria vaccine

- The R21/MatrixM malaria vaccine, developed by the University of Oxford and manufactured by the Serum Institute of India, has been recommended by the WHO on October 2 but has not yet been prequalified.
- Three countries, Nigeria, Ghana, and Burkina Faso, have already approved the use of the vaccine to immunize children under 36 months.
- In 2021, there were 247 million malaria cases worldwide, resulting in 619,000 deaths, with approximately 25 million children born in regions with moderate to high malaria transmission.
- A phase-3 trial of the vaccine involved 4,800 children in Mali, Burkina Faso, Kenya, and Tanzania, randomly assigned to receive either the malaria vaccine or a control (approved rabies vaccine).
- The vaccine efficacy after one year was 75% in areas with seasonal malaria and 68% where malaria is perennial for children aged 5-36 months.
- For children aged 5-17 months, more vulnerable to severe malaria, the vaccine efficacy was 79% in seasonal areas and 75% where malaria is perennial.
- In children aged 18-36 months, vaccine efficacy was 73% in seasonal areas and 63% where malaria is perennial.
- A booster dose given 12 months after the primary series helped maintain vaccine efficacy.
- The vaccine showed higher efficacy in younger children (5-17 months) compared to older children (18-36 months), possibly due to previous malaria exposure.
- The vaccine's efficacy is higher in areas with seasonal malaria than in areas with perennial malaria.
- The vaccine may help reduce malaria transmission and parasite load, especially when combined with other strategies like mosquito nets.
- The cost of the R21/Matrix-M vaccine is estimated to be between $2 and $4 per dose, and Serum Institute plans to produce over 100 million doses per year.

Significance of quantum dots in nanotechnology

- Quantum dots are tiny assemblies of atoms, just a few thousand, around a few nanometers wide.
- They exhibit quantum mechanical effects due to the confined space for electrons and can behave like artificial atoms.
- Quantum dots fall between atomic and bulk materials, with properties that change based on their size.

- When exposed to light, they absorb and re-emit it at different frequencies, with smaller dots emitting bluer light and larger dots emitting redder light.
- Quantum dots have diverse applications, including surgical oncology, advanced electronics, and quantum computing.
- The Nobel laureates, Ekimov, Brus, and Bawendi, made significant contributions to understanding and producing quantum dots.
- Moungi Bawendi's team developed the hot-injection method in 1993, allowing precise control over quantum dot size and accelerating their adoption in various technologies.
- Quantum dots are used in TV screens, controlling chemical reactions, acting as semiconductors, enhancing solar cell efficiency, highlighting tumors, facilitating hydrogen extraction from water, and serving as multiplexers in telecommunications.

New tools to fathom the world of electrons

- The 2023 Nobel Prize in Physics was awarded to Anne L'Huillier, Pierre Agostini, and Ferenc Krausz for generating attosecond pulses of light to study electron dynamics.
- An attosecond is one quintillionth of a second (10^{-18} seconds), which is the timescale at which electron properties change.
- Attosecond science involves producing extremely short light pulses to study fast processes, similar to capturing a hummingbird's wingbeat.
- High-harmonic generation, discovered in 1988, is the key to producing attosecond pulses by passing infrared light through a noble gas.
- Attosecond pulses are created by combining multiple overtones through constructive interference, producing pulses lasting a few hundred attoseconds.
- The duration of attosecond pulses can be measured using the RABBIT technique, which involves shining attosecond pulses and longer pulses on noble gas atoms.
- Applications of attophysics include improving our understanding of electron behavior, which has implications in various fields such as solar power and chemistry.
- While the current equipment for attosecond pulses is costly and bulky, future miniaturization may make it more accessible for research.

How was mRNA research used to fight COVID?

- The 2023 Nobel Prize in Physiology or Medicine was awarded to Katalin Karikó and Drew Weissman for their discoveries related to nucleoside base modifications that enabled the development of effective mRNA vaccines against COVID-19.
- mRNA vaccines introduce genetic material corresponding to a viral protein, typically the spike protein, to activate the immune system without exposing individuals to the live virus.
- mRNA vaccines are different from traditional vaccines as they rely on fragile mRNA molecules enclosed in lipid nanoparticles for stability.
- A challenge with mRNA vaccines is their requirement for ultra-low storage temperatures, from -90°C to -50°C.
- The significance lies in the potential of mRNA technology for clinical purposes despite initial hurdles. mRNA research had faced challenges related to stability, delivery, and inflammatory reactions.
- Dr. Katalin Karikó faced struggles in her career, including being forced to retire from Pennsylvania University. She spent years pursuing grants to fund her mRNA research.
- Dr. Karikó and Dr. Weissman's breakthroughs in protecting mRNA from degradation using lipid nanoparticles and their research on mRNA delivery were crucial for the development of COVID-19 vaccines by Pfizer and BioNTech.

Nobel Peace Prize 2023 goes to jailed Iranian activist Narges Mohammadi

- Nobel Peace Prize 2023 awarded to Iranian activist Narges Mohammadi.
- Recognized for her advocacy for women's rights, democracy, and opposition to the death penalty.
- Despite arrests and imprisonment by Iranian authorities, she continued her activism.
- Narges Mohammadi played a significant role in women-led protests triggered by a woman's death in police custody.
- The Norwegian Nobel Committee acknowledged her as a leader of a broader movement in Iran.
- The committee hopes the prize encourages the movement and urges Iran to release her in time for the ceremony on December 10.
- Narges Mohammadi expressed gratitude for global support and hopes it strengthens Iranians' efforts for change.
- She has been imprisoned 13 times and sentenced to 31 years in total.

- Her most recent incarceration was in 2021 after attending a protest-related memorial.
- Narges Mohammadi is the 19th woman to win the Nobel Peace Prize and the second Iranian woman after Shirin Ebadi in 2003.

Aligning higher education with the United Nations SDGs

- United Nations Sustainable Development Goals (SDGs) are a set of 17 goals with 169 targets to be achieved by 2030 by all 193 UN member states.
- The SDGs address poverty, socio-economic, and environmental issues and aim to improve the standard of life, reduce inequality, and promote economic growth.
- Slow progress has been reported in achieving the SDGs, exacerbated by COVID-19, the climate crisis, conflicts, and a weak global economy.
- India has made efforts to align with SDGs, particularly SDG4 regarding quality education, with a focus on higher education.
- The National Education Policy (NEP) 2020 in India supports SDGs by emphasizing changes in education at all levels, especially in higher education.
- Higher education empowers individuals, reduces poverty, hunger, promotes health, gender equality, employment, economic growth, and reduces inequalities.
- Universities should strengthen the research-teaching nexus, promoting multidisciplinary and interdisciplinary education.
- Collaboration with private companies is essential for innovation and sustainable development.
- Value-Based Education (VBE) can promote responsible citizenship and contribute to achieving SDGs.
- Indian higher education should align day-to-day operations with SDGs, and universities should play a more active role in their local communities.
- Sustainability should be incorporated into institutional strategies, impacting daily administration, teaching, and research.
- Universities should directly integrate with socio-economic development and contribute to citizens' well-being and nation-building.

MGNREGS runs out of funds; Ministry seeks more budget

- Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) has run out of funds in the current financial year.
- The scheme is facing a deficit of ₹6,146.93 crore, six months into the financial year.
- ₹60,000 crore was sanctioned for MGNREGS for 2023-24, which is 18% lower than the budget estimates and 33% lower than the revised estimates for 2022-23.
- The Ministry of Rural Development has approached the Finance Ministry for a supplementary budget of ₹23,000 crore.
- Finance Minister Nirmala Sitharaman has stated that MGNREGS is demand-driven, and additional funds will be provided as needed.
- The Ministry of Rural Development emphasizes that the scheme's fund release is continuous and based on demand, labor budgets, opening balances, pending liabilities, and overall performance.
- Out of the sanctioned ₹60,000 crore, ₹56,105.69 crore (93.5%) has been released to the states as of October 4.
- The annual budget cuts and the need for supplementary budgets have become a recurring issue for MGNREGS, affecting the scheme's functioning.
- The cycle of budget cuts leads to piling wage dues and reduced work allocation, impacting the scheme's effectiveness.

India to hold discussion with Canada during G20 Parliament Speakers' meet

- India will discuss various issues with the Canadian Speaker of the Senate during the G-20 Parliament Speakers' meeting.
- The discussions will take place during the ninth Parliamentary Speakers' Summit (P-20) of G-20 nations.
- The summit will be held from October 12 to 14 at the India International Convention and Expo Centre.
- Prime Minister Narendra Modi will inaugurate the summit on October 13.
- Over 350 delegates, including members of Parliament and international leaders, are expected to attend.
- The main theme of the summit is "Parliaments for One Earth, One Family, One Future."
- Sessions will cover topics like "Transformation in People's Lives through Public Digital Platforms," "Women-led Development," "Accelerating Sustainable Development Goals," and "Sustainable Energy Transition."
- A pre-summit event, the Parliamentary Forum on Lifestyle for Environment (LiFE), will take place on October 12.
- An exhibition titled "Mother of Democracy" will be organized to showcase India's democratic traditions.

📍 **GTB Nagar, Delhi - 110009**
📞 8588876885, 9999088430

📍 **Nirman Vihar, Delhi - 110092**
🔲 f ▶ Successmantradigital

📍 **Pitampura, Delhi - 110034**
🌐 www.successmantra.in

50

2 out of 5 amphibians are facing extinction threat due to climate change: study 'Ongoing declines for the world's amphibians in the face of emerging threats'

- Climate change is emerging as a significant threat to amphibians, including frogs, salamanders, and caecilians.
- A study titled 'Ongoing declines for the world's amphibians in the face of emerging threats' published in Nature on October 4, 2023, reveals this threat.
- The study is based on the second global amphibian assessment conducted by the Amphibian Red List Authority, part of the International Union for Conservation of Nature's Species Survival Commission and managed by Re:wild, a wildlife conservation group.
- Over 8,000 amphibian species worldwide were evaluated for extinction risk, with 2,286 species assessed for the first time.
- Two out of every five amphibian species are facing a threat of extinction.
- More than 300 amphibian species have moved closer to extinction between 2004 and 2022 due to various threats, with climate change being the primary threat for 39% of these species.
- Amphibians are particularly vulnerable to climate change because they are sensitive to environmental changes.
- Climate change-induced factors such as extreme heat, wildfires, droughts, and hurricanes are limiting the mobility of amphibians.
- Habitat destruction and degradation impact 93% of all threatened amphibian species.
- The study underscores the importance of expanding habitat protection and corridors in critical biodiversity areas to address these threats.

Norway's Jon Fosse wins Nobel for literature

- Jon Fosse, a 64-year-old Norwegian playwright, won the Nobel Prize in literature.
- He was honored for his innovative plays and prose that give voice to the unsayable.
- Fosse's works include plays, novels, poetry collections, essays, children's books, and translations.
- Major works include "Boathouse" and "Melancholy I and II."
- Fosse expressed his gratitude for the award, emphasizing the importance of literature.
- The Nobel committee recognized his ability to evoke a sense of loss of orientation leading to a deeper experience.
- Fosse, originally from western Norway, converted to Catholicism in 2013.
- He debuted with the novel "Red, Black" in 1983.
- His latest book, "Septology," is a semi-autobiographical work with seven parts across three volumes.
- Fosse's play "Someone is Going to Come" brought him international recognition when staged in Paris in 1999.
- He also gained acclaim for the play "And We'll Never be Parted" in 1994.
- His work has been translated into approximately 50 languages.

1st public sector caravan park in Kerala to bring in more tourists to Bekal Fort

- Kerala is setting up a caravan park at Bekal Fort in Kasaragod.
- Bekal Fort is known for its stunning architecture and overlooks the Arabian Sea.
- The project is being undertaken by the Kerala Tourism Development Corporation (KTDC).
- Bekal has been selected for development under cinema tourism to attract tourists.
- The KTDC has also proposed caravan parks at Ponmudi and Bolgatty Palace.
- This will be the first public-sector caravan park in Kerala.
- The project has been sanctioned with a budget of ₹1.53 crore.
- Caravan tourism in the state initially gained popularity but lacked private investment.
- Currently, there is only one private caravan park in Wagamon.
- Administrative issues delayed the construction of some parks in the state.
- The introduction of more public-sector caravan parks is expected to boost the sector

Inspiring colours

- The 2023 Nobel Prize in Chemistry was awarded to 3 individuals for their work on quantum dots.
- Quantum dots are small crystals with a size of a few nanometers and contain only a few thousand atoms.
- When atoms are densely packed in quantum dots, their electrons behave according to the laws of quantum mechanics, allowing quantum dots to mimic the behavior of atoms.
- Quantum dots can absorb and re-emit light at different frequencies depending on their size, with smaller dots emitting higher-frequency light.

- Quantum dots have applications in transistors, lasers, medical imaging, and quantum computing.
- Alexei Ekimov in the Soviet Union first synthesized quantum dots in glass in 1981.
- Louis Brus synthesized quantum dots in a solution in the U.S. in 1983 and studied their quantum-physical properties.
- Moungi Bawendi developed a reliable method to produce high-quality quantum dots in 1993.
- Quantum dots have diverse applications, and their appeal lies in their ability to emit various colors of light, inspiring innovations in technology and medicine.

India expanding censorship regime, creating uneven playing field: study

- Freedom House, a Washington-based non-profit organization, released a report on global Internet freedom, indicating a decline for the 13th consecutive year.
- The report covers developments between June 2022 and May 2023 and evaluates Internet freedom in 70 countries.
- It highlights that the environment for human rights online deteriorated in 29 countries, with only 20 countries showing net gains.
- The report, titled "Freedom on the Net 2023: The Repressive Power of Artificial Intelligence," expresses concern about the increasing use of artificial intelligence (AI) by governments for censorship and the spread of disinformation.
- Iran saw the sharpest rise in digital repression, with authorities shutting down Internet service and blocking WhatsApp and Instagram during anti-government protests.
- China remained ranked as the world's worst environment for Internet freedom for the ninth consecutive year, while Myanmar ranked as the second most repressive.
- The report noted that legal repercussions for online expression occurred in a record 55 countries, and the number of countries with widespread arrests and long prison terms for online activities increased from 18 in 2014 to 31 in 2023.
- Elections often triggered digital repression, with incumbent leaders restricting speech, blocking independent news sites, and controlling information flow.
- In India, Prime Minister Narendra Modi's government incorporated censorship, including AI-based moderation tools, into the legal framework. The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules require social media platforms to use AI for content moderation.
- The report highlighted restrictions on access to a BBC documentary and the use of automated scanning tools to monitor related posts.
- It expressed concern that India's expanding censorship regime was silencing criticism and independent reporting on the ruling party, creating an uneven playing field as the country prepares for general elections in 2024.
- India engaged in various censorship methods, including Internet connectivity restrictions, blocking social media platforms and websites, and forced removal of content.
- India scored 50 out of 100 in the evaluation of Internet freedom, with Iceland having the highest Internet freedom score of 94.

Bangladesh gets its first batch of uranium

- Bangladesh received its first uranium delivery for its Russian-backed nuclear plant.
- The nuclear plant is a $12.65-billion project aimed at improving Bangladesh's energy grid.
- Russia is providing 90% of the funding for the plant through a loan.
- The project is expected to help address chronic blackouts in Bangladesh.
- Russian President Vladimir Putin emphasized the strong friendship and partnership between Russia and Bangladesh during a videoconference with Prime Minister Sheikh Hasina.
- Putin pledged assistance for uranium supply, maintenance, and management of spent fuel.
- Construction on the nuclear plant in Rooppur began in 2017, with the first 1,200-megawatt unit set to start operations next year, and both reactors expected to be fully operational by 2025.

Govt. 'needs to prioritise childhood cancers'

- Childhood Cancer Awareness Month has highlighted the need for better management of pediatric cancers.
- Key priorities include raising awareness, ensuring treatment by specialists, increasing care centers, making treatments affordable, and prioritizing childhood cancers.
- According to the International Agency for Research on Cancer, an estimated 400,000 children and adolescents aged 0 to 19 years are diagnosed with cancer worldwide each year.

- In Tamil Nadu, there were 2,513 new cancer cases among children in 2022, accounting for 2.9% of all cancers in all age groups.
- Pediatric cancers occurred more frequently in boys than girls, with a ratio of 123 boys to 100 girls.
- The most common pediatric cancers included leukemia, lymphoma, and brain and central nervous system tumors.
- Pediatric cancers represent two to three percent of all cancers diagnosed in India, with leukemia being the most common type followed by brain tumors.
- A major challenge is the lack of awareness about pediatric cancer, as symptoms can mimic common infections, leading to late diagnosis.
- The cost of care for pediatric cancer is increasing, and there is a need for better insurance coverage, as common blood cancers can cost significantly more than what insurance provides.
- India accounts for 18% to 20% of the world's burden of pediatric cancer, but historically, it has not been prioritized in national cancer control policies.
- There is a call for a major policy shift to recognize and prioritize pediatric cancers in national policies.
- Tailored therapy has improved the prognosis for pediatric leukemia, with at least a 70% success rate.
- Relapse is a significant concern, and more attention is needed for relapsed leukemia in children.
- Centers closer to home, shared care pediatric oncology centers, and better insurance coverage are among the solutions suggested to improve the management of pediatric cancers in India.

Trio wins Chemistry Nobel for 'quantum dots'

- 2023 Nobel Prize in Chemistry awarded to Alexei Ekimov, Louis Brus, and Moungi Bawendi.
- Awarded for their work on quantum dots, very small crystals with unique properties.
- Quantum dots have applications in LED screens, quantum computers, flexible electronics, sensors, solar cells, and encrypted quantum communication.
- Quantum dots are nanoscale crystals with a few thousand atoms, and their properties are influenced by quantum mechanics.
- When light is shined on quantum dots, they absorb and re-emit it at different colors depending on their size.
- Dr. Ekimov and Dr. Brus synthesized the first quantum dots in glass and liquid in the early 1980s, demonstrating their ability to fluoresce light of different colors.
- Dr. Bawendi and his team developed a method in 1993 to consistently synthesize high-quality quantum dots by injecting a compound into a specific solvent and heating the solution, resulting in nanocrystals with smooth shapes.
- The Nobel Committee inadvertently revealed the winners' names in an email, breaking with tradition.
- Quantum dots are expected to have a significant impact on various technological advancements.

Anne L'Huillier, Pierre Agostini, and Ferenc Krausz awarded the 2023 physics Nobel Prize.

- Recognized for building tools to study rapid changes in electron properties according to quantum mechanics.
- Dr. L'Huillier's research found that an infrared beam on noble gas produced multiple overtones with peculiar relationships.
- The reinforcing effect of these overtones could be timed to emit intense peaks in attoseconds.
- Dr. Agostini demonstrated the production of light with a pulse duration of 250 attoseconds in 2001.
- Dr. Krausz isolated a single pulse of 650 attoseconds and used it to measure the kinetic energy of electrons from krypton atoms.
- Attosecond physics has potential applications in biochemistry, diagnostics, superconductivity, and manufacturing techniques.
- The Nobel Committee recognizes the value of making difficult tasks easier, as it often leads to unforeseen applications.

Keeping tabs on carbon with an accounting system

- The climate 'polycrisis' refers to interconnected crises related to climate change affecting various sectors and domains.
- It includes physical impacts like rising temperatures, sea-level rise, and extreme weather, along with social, economic, and political challenges.
- India illustrates how different sectors such as energy, infrastructure, health, migration, and food production are interconnected and impacted by climate change.
- A holistic approach is needed, considering diverse perspectives and priorities while ensuring resilience, equity, and justice.
- Tweaking one aspect of the climate challenge can lead to unexpected consequences elsewhere.
- A deep transformation towards a carbon-sensitive economy is necessary, similar to digital infrastructure's impact.

GTB Nagar, Delhi - 110009
8588876885, 9999840430

Nirman Vihar, Delhi - 110092
Successmantradigital

Pitampura, Delhi - 110034
www.successmantra.in

53

- Measurement is crucial, starting from individual carbon emissions to the national level.
- National Carbon Accounting (NCA) is proposed, bringing the entire nation under one carbon accounting framework.
- This approach can lead to carbon tax returns, revolutionizing public finance and incentivizing carbon reduction.
- Carbon accounting, like financial accounting, makes carbon visible and facilitates tracking carbon inflows and outflows.
- NCA enables setting targets, predicting emission reductions, and tracking progress.
- A national carbon budget can help re-imagine the economy and align it with ecological sustainability.
- NCA can help India achieve its net-zero commitment by 2070 and create new livelihoods and economic structures.
- It fosters transparency in carbon footprints and aligns development with ecological sustainability.

In first election since 2019, Ladakh queues up, registers 77.61% voting
- The fifth Ladakh Autonomous Hill Development Council-Kargil (LAHDC-K) elections saw a high turnout of 77.61%.
- These are the first elections in Ladakh since it became a Union Territory in 2019.
- In 2018, the turnout was around 70%, indicating a significant increase.
- There are 85 candidates vying for the 26-member Hill Council, with Congress having the most candidates at 22, followed by 17 each from the National Conference (NC) and the Bharatiya Janata Party (BJP).
- The BJP faces a tough challenge against the NC-Congress combine.
- 24 candidates are running as Independents.
- Kargil has a population of 1.08 lakh and around 65,878 voters, with a Shia Muslim majority.
- Kaksar village, which saw dislocation during the 1999 Kargil war due to Pakistani shelling, welcomed the ceasefire agreement between India and Pakistan.
- Some residents expressed discontent with the separation of Kargil from Kashmir and called for the return of Statehood and Article 370 provisions.
- Voters in Kargil expressed a desire for a strong Hill Council that improves the education sector by establishing more professional colleges.
- In Hunderman, residents noted concerns about the water crisis due to decreased snowfall.

New Defence Indigenisation list has futuristic weapons, systems
- Defence Minister Rajnath Singh released the fifth Positive Indigenisation List of 98 items.
- These items are to be procured by the three Services from domestic sources.
- The list emphasizes import substitution for components of major systems, platforms, weapon systems, sensors, and munitions.
- It is the result of consultations with stakeholders in the Department of Military Affairs.
- The Navy's updated indigenisation roadmap, "Swavlamban 2.0," was also released.
- During the seminar "Swavlamban 2.0," 76 challenges for the industry were launched.
- These challenges are part of the "10th Defence India Start-up Challenges (DISC-10)" and "DISC 10 PRIME of Innovations for Defence Excellence (iDEX)."
- Two INDUS X challenges were launched jointly with the U.S. Department of Defence under "INDUS-X Mutual Promotion of Advanced Collaborative Technologies" (IMPACT).
- The items on the indigenisation list include infantry combat vehicles, unmanned aerial vehicles, precision kill systems, radars, and more.
- The Navy sought solutions to 75 challenges last year and concluded over 100 technological development agreements.

Govt. eases aircraft recovery rules
- Government notification excludes aircraft, helicopters, and engines from protection under the Insolvency and Bankruptcy Code 2016.
- Go First's insolvency resolution proceedings were granted a blanket moratorium in May, protecting it from lessors and creditors.
- Lessors of nearly all of Go First's 54 aircraft had sought deregistration over pending dues.
- The DGCA is legally examining the government notification before deciding on de-registration.
- Lessors had approached the Delhi High Court, arguing that the moratorium was against the Cape Town Convention and Protocol of 2001, which allows lessors to terminate agreements and take possession in case of default.
- The new notification requires lessors to move to NCLT or other courts to seek de-registration and export of their aircraft.

- The Aviation Working Group assigned India a negative outlook due to the Go First matter, which may lead to higher premiums for Indian airlines leasing aircraft.

BlueWalker 3 satellite outshines most stars

- BlueWalker 3 is a prototype satellite belonging to AST SpaceMobile.
- It is part of a satellite constellation aimed at providing global mobile and broadband services.
- BlueWalker 3 was observed to be one of the brightest objects in the night sky, potentially disrupting astronomy.
- Astronomers are concerned about satellite constellations disrupting night sky observations.
- Data from various locations worldwide was used to track BlueWalker 3's trajectory.
- Mitigating the satellite's brightness is challenging and could lead to data loss in affected sky portions.
- BlueWalker 3's radio frequency emissions may interfere with radio astronomy.
- Research is needed to protect telescopes from interference caused by upcoming satellite constellations.
- Researchers acknowledge the importance of satellite constellations for global communications but emphasize the need to minimize their impact on astronomy.

[The triumph of Vachathi over a hostile state]
Madras High Court upholds conviction of 215 forest, revenue department officials in 1992 Vachathi rape case

- The Madras High Court upheld the convictions of 215 people involved in the heinous 1992 Vachathi Atrocities Case.
- In 2011, a lower court had convicted 215 policemen, forest and revenue officials for raping 18 women and torturing men in the tribal village of Vachathi in Tamil Nadu.
- On June 20, 1992, about 300 uniformed officials unleashed violence on the village on the pretext of unearthing smuggled sandalwood. 18 women including a woman who was pregnant were raped. And, 90 women, 28 children and 15 men were illegally confined in the Forest Rangers office. The custodians of law ordered the "Oor Gounder" (the village chief) to strip the women. The women were then asked to beat him with brooms. Several villagers were sent to Central Jail, Salem. The officials continued the plunder and violence, forcing the villagers to flee to the forests. Over 3 days, the assault on the villagers, who were seen as "silent supporters" of dreaded bandit Veerappan, continued.
- Madras HC upheld the lower court's 2011 order while dismissing the convicts' appeal against it. The lower court had sentenced them to 1 to 10 years in jail.
- The state should also provide the survivors with jobs, the court said in its order.
- It also ordered the government to provide ₹ 10 lakh each as compensation to the 18 rape survivors, out of which ₹ 5 lakh has to be recovered from each of the rape convicts.
- The state should also provide the survivors with jobs and help them or their families with self-employment opportunities, the court said in its order.
- Out of the 269 accused in the case, 126 were forest officials, 84 police personnel and 5 revenue officials were found guilty 12 years ago. 54 of the accused had died before the judgment was passed.
- The court has also directed the government to take strict action against the then district collector, Superintendent of Police (SP), and Divisional Forest Officer (DFO) who had failed to act against the accused.
- The villagers of Vachathi have created history and the court verdict is testament to their resolve. it is an assertion of their dignity. This is among the rarest cases in the annals of legal history where all 215 accused (the survivors of the 269 accused), government and law enforcement personnel stand convicted en masse of offences under Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989 and the Indian Penal Code.

How has the Nagorno-Karabakh standoff ended?

- Recently, Azerbaijan launched a military operation in the disputed Nagorno-Karabakh region, resulting in casualties. The operation is part of a long-standing dispute between Azerbaijan and Armenia over the region.
- Nagorno-Karabakh, known as Artsakh by Armenians, is a landlocked mountainous area in the Caucasus region (the transcontinental region between the Black Sea and the Caspian Sea).
- It is internationally recognised as part of Azerbaijan but its inhabitants are predominantly ethnic Armenians.
- They have their own government which has enjoyed close links to Armenia's but has not been officially recognised by Armenia or any other country.
- The conflict dates back to the late 1980s when the region declared its independence from Azerbaijan as the Soviet Union collapsed.

- The first war erupted between Armenia and Azerbaijan over the territory, which ended with a ceasefire in 1994, leaving Nagorno-Karabakh and some surrounding areas under Armenian control.
- The ceasefire was frequently violated by both sides, and several attempts to negotiate a peaceful settlement failed.
- In 2020, Azerbaijan launched the Second Karabakh War, winning a resounding victory and retaking seven surrounding districts and about a third of Nagorno-Karabakh.
- Russia brokered a peace deal after the Second Karabakh War in 2020 and provided for up to 1,960 Russian peacekeepers stationed in the region.

Azerbaijan:
- Azerbaijan is a country in Asia that is bordered by Russia, Georgia, Armenia, and Iran. The east of the country is bordered by the Caspian Sea.
- Capital city: Baku

Armenia:
- A landlocked country in the Caucasus with Turkey to the west, Georgia to the north, and Azerbaijan to the east.
- Capital: Yerevan.
- Armenia is a mountainous country.
- Highest Peak: Mount Ararat.

Counting deaths in India's prisons

- Recently, the Supreme Court Committee on Prison Reforms has found suicide to be one of the leading causes of Unnatural Deaths among Indian prisoners.
- Prison Deaths are labeled as Natural or Unnatural by the Prison Statistics India report published by the National Crime Records Bureau (NCRB) every year.
- In 2021, a total of 2,116 prisoners died in judicial custody, with almost 90% of cases recorded as natural deaths.
- Natural Deaths account for aging and illness. Illness has been further sub-categorized into diseases such as heart conditions, HIV, tuberculosis, and cancer, among others.
- Unnatural Deaths are more diverse in classification, profiled as:
  - Suicide (due to hanging, poisoning, self-Iinflicted injury, drug overdose, electrocution, etc.)
  - Death due to inmates
  - Death due to assault by outside elements
  - Death due to firing
  - Death due to negligence or excesses
  - Accidental deaths (natural calamities like earthquakes, snakebites, drowning, accidental fall, burn injury, drug/alcohol consumption, etc.
- The suicide rate among inmates was found to be more than twice in comparison to what is recorded in the general population.
- Efforts to Tackle Prison Death: The Supreme Court in a 1996 judgment articulated the social obligation towards prisoners' health, noting that they suffer from a "double handicap".
  - *First, the prisoners do not enjoy the access to medical expertise that free citizens have. Their incarceration places limitations on such access; no physician of choice, no second opinions, and few if any specialists.*
  - *Secondly, because of the conditions of their incarceration, inmates are exposed to more health hazards than free citizens.*
- The Model Prison Manual of 2016 and the Mental Healthcare Act of 2017, outline inmates' right to healthcare.
- This includes adequate investment in healthcare facilities, setting up mental health units, training officers to provide basic and emergency care, and formulating suicide prevention programmes to thwart such instances.
- In light of rising suicide cases, the NHRC in June 2023 issued an advisory to States, highlighting that suicides arise out of both medical and mental health issues.
- The NHRC recommended filling positions of "Prison Welfare Officers, Probation Officers, Psychologists, and Medical Staff".
- The total number of prisons at national level has increased from 1,306 in 2020 to 1,319 in 2021, having increased by 1.0%.
- The highest number of jails was reported in Rajasthan (144) followed by Tamil Nadu (142), Madhya Pradesh (131).

Q1. What is one of the leading causes of unnatural deaths among Indian prisoners, as identified by the Supreme Court Committee on Prison Reforms?

    a) Illness   b) Death due to inmates   c) Suicide   d) Accidental deaths

Answer: C) Suicide

Q2.According to the Prison Statistics India report in 2021, what percentage of prisoner deaths were categorized as natural deaths?

a) 10%   b) 50%   c) 90%   d) 75%

Answer: C) 90%

Q3. Unnatural deaths among prisoners in India can be categorized into various types. Which of the following is NOT one of the categories of unnatural deaths mentioned in the information?

a) Death due to inmates   b) Death due to firing   c) Death due to disease   d) Death due to negligence or excesses

Answer: C) Death due to disease

Q4. The suicide rate among inmates was found to be more than twice as high as the general population. What is one of the reasons mentioned for this higher rate?

a) Lack of food in prisons   b) Limited access to medical expertise

c) Overcrowding in prisons   d) Lack of recreational activities

Answer: B) Limited access to medical expertise

Q5. What key recommendations did the NHRC issue in June 2023 to address the rising suicide cases among prisoners?

a) Increase the number of prisons

b) Fill positions of Prison Welfare Officers, Probation Officers, Psychologists, and Medical Staff

c) Reduce the number of inmates in prisons

d) Increase the number of security guards

Answer: B) Fill positions of Prison Welfare Officers, Probation Officers, Psychologists, and Medical Staff

IAF possibly to induct Astra BVR air-to-air missile by 2023 -end

- The Indian Air Force (IAF) has placed two contracts with Bharat Dynamics Limited (BDL) for the indigenous Astra Beyond Visual Range (BVR) Air to Air Missile.
- The first batch is expected to be inducted by the end of 2023.
- ASTRA is a state-of-the-art Beyond Visual Range (BVR) air-to-air missile to engage and destroy highly manoeuvring supersonic aerial targets.
- BVM missiles are capable of engaging beyond the range of 20 nautical miles or 37 kilometres.
- It is designed and developed by Defence Research and Development Laboratory (DRDL), Research Centre Imarat (RCI) and other laboratories of DRDO.
- It will be deployed on fighter jets like Sukhoi-30 MKI and Tejas of the IAF and the Mig-29K of the Navy.
- The missile has been designed based on requirements specified by the IAF for BVR as well as close-combat engagement.
- It can neutralise adversary airborne assets without exposing adversary air defence measures.
- The missile can travel at speeds more than four times that of sound and can reach a maximum altitude of 20 km, making it extremely flexible for air combat.

What are the Lagrange points and why is Aditya-L1 headed to one

Lagrange points, as described in the passage, are indeed fascinating and play a crucial role in space science and exploration. These points are positions in space where the gravitational forces of 2 large celestial bodies, like the Earth and the Sun, or a planet and its moon, balance the centripetal force felt by a smaller object, allowing it to remain relatively stationary relative to the two larger bodies.

Gravitational Balance: Lagrange points result from a balance of gravitational forces between celestial bodies. In a two-body system, like the Earth and the Moon, the gravitational forces of the two bodies act in opposite directions, and their combination results in a stable point where a smaller object can remain.

L1, L2, L3, L4, and L5: There are five Lagrange points in a two-body system, often referred to as L1, L2, L3, L4, and L5. L1, L2, and L3 lie along an imaginary line connecting the two larger bodies, and they are generally unstable. L4 and L5 are stable points forming equilateral triangles with the two larger bodies.

Space Observatories: Lagrange points offer unique "parking spots" in space for satellites and observatories. Spacecraft positioned at Lagrange points, especially L1, can observe celestial bodies and phenomena without being affected by the Earth's atmosphere and can stay relatively stationary for extended periods.

Importance for Space Exploration: Lagrange points are crucial for space exploration and the study of the cosmos. They provide stable platforms for observing the Sun, Earth, and other celestial objects. Missions like the Aditya-L1 solar mission and various space observatories are located at these points.

Potential for Space Colonies: Lagrange points, particularly L4 and L5, are considered as potential sites for future space colonies. Because of their stable positions and low fuel requirements, they could be suitable for establishing habitable space stations for long-term human presence.

Artificial Gravity: Space stations at Lagrange points can potentially create artificial gravity by spinning on their axes using rocket thrusters. This could make it possible for people to live and work in space for extended periods.

The concept of Lagrange points is named after the mathematician Joseph-Louis Lagrange, who made significant contributions to celestial mechanics and provided the mathematical framework for understanding these points. They continue to be of great interest to scientists and space agencies for their unique properties and potential applications in space exploration and observation.

Q1, What are Lagrange points primarily defined by?

    a) A balance of centripetal forces   b) The interaction between the Earth and the Moon

    c) The rotation of celestial bodies   d) The effect of the Earth's atmosphere

ANS: a. A balance of centripetal force

Q2. How many Lagrange points exist in a two-body system, like the Earth and the Moon?

    a) 3   b) 4   c) 5   d) 6

Ans c)

Q3. Why are Lagrange points valuable for space observatories and spacecraft?

    a) They provide a stable environment for scientific instruments.

    b) They have stronger gravitational forces than other locations in space.

    c) They are ideal for launching rockets.

    d) They allow for easy communication with Earth.

Ans a) They provide a stable environment for scientific instruments.

Q4. In which Lagrange point are missions like the Aditya-L1 solar mission and various space observatories located?

    a) L1   b) L2   c) L3   d) L4

Ans a)

Q5. Who is the mathematician after whom the concept of Lagrange points is named?

    a) Isaac Newton   b) Johannes Kepler   c) Joseph-Louis Lagrange   d) Galileo Galilei

Ans c) Joseph-Louis Lagrange

Oil firms raise ATF and commercial LPG prices

- Commercial cooking gas price increased by ₹209 per 19-kg cylinder.
- Aviation turbine fuel (ATF) price raised by 5% for the fourth consecutive month.
- Domestic LPG cylinder price remains unchanged.
- Price increase may affect expenses for hotels and restaurants.
- Current prices: ₹1,731.50 in Delhi, ₹1,684 in Mumbai, ₹1,898 in Chennai.

Change in Maldives

- Mohamed Muizzu, the Mayor of Male, has been elected as the new leader of the Maldives, replacing President Ibu Solih.
- Muizzu won the presidential run-off with nearly 54% of the vote, while Solih secured 46%.
- Factors contributing to Solih's electoral loss include anti-incumbency sentiment, economic concerns post-COVID-19, party rifts, and sovereignty issues.
- The PPM party, led by Abdulla Yameen, had initiated an "India out" campaign to remove Indian military personnel during Yameen's tenure.
- Solih had pursued an "India First" policy, strengthening ties with India through infrastructure projects and pandemic assistance.

- Commentators framed the election as an India versus China contest.
- Prime Minister Narendra Modi congratulated President-elect Muizzu, emphasizing the need for India to avoid taking sides in Maldivian politics.
- Muizzu's challenges include managing the Maldivian economy, addressing debt repayments, and considering a referendum for a parliamentary system.
- Balancing relations with India, China, and the United States is crucial for the Maldives due to its strategic location in the Indian Ocean.
- Both India and the Maldives should avoid viewing their interests as "zero-sum" to prevent tensions.

India's statistical performance on the global stage

- India Ranks 67th among 174 countries in the World Bank's Statistical Performance Indicators (SPI) for 2019.
- SPI assesses national statistical systems based on 5 dimensions: data use, data services, data products, data sources, and data infrastructure.
- India's overall SPI score in 2019 is 70.4, with lower scores in 'Data use' and 'Data products' pillars.
- 'Data use' measures how different sectors use statistics; India performs well but loses points for unavailability of comparable poverty estimates.
- 'Data products' focuses on essential data for Sustainable Development Goals (SDGs); India has taken steps to improve data collection for SDGs.
- 'Data infrastructure' scores lower due to moderate performance in 'Standards and methods' and poor performance in 'Finance'.
- India excels in 'Data services' and 'Data sources' but receives a low score in administrative data due to coverage issues.
- Proactive engagement with the World Bank is needed to improve SPI robustness and enhance rankings.
- Using reliable sources like "Vital Statistics of India" for estimates can improve the SPI.

The largest climate action lawsuit against 32 countries

- Six young people from Portugal, aged 11 to 24, are suing 32 European governments at the European Court of Human Rights for failing to take sufficient action against the climate crisis.
- The lawsuit, Duarte Agostinho and Others versus Portugal and Others, was filed in September 2020, following wildfires in Portugal in 2017 that claimed lives and destroyed forests.
- The plaintiffs argue that these governments have violated their human rights, including the right to life, privacy, and freedom from discrimination, by exceeding carbon budgets consistent with the Paris Agreement's 1.5°C target.
- They call for more ambitious emissions reductions, cuts in fossil fuel production, and cleaning up global supply chains.
- The European Scientific Advisory Board on Climate Change (ESABCC) recommends a 75% emissions reduction below 1990 levels, exceeding the EU's current target of 55%.
- UNICEF describes the climate crisis as a "child rights crisis" due to its impact on education, health, and future prospects.
- Some governments, like Greece and Portugal, have denied the direct impact of climate change on human health and life, while the case is expected to be ruled upon in the first half of 2024.

Indonesia set to launch China-funded high-speed rail, first in Southeast Asia

- Indonesia is launching Southeast Asia's first high-speed railway.
- The project is backed by China and part of the Belt and Road infrastructure initiative.
- The "Whoosh" bullet train will connect Jakarta and Bandung in 45 minutes.
- The project faced delays and cost overruns, with a final cost exceeding $7 billion.
- President Joko Widodo will inaugurate the high-speed railway.
- The train can reach speeds of up to 350 km/h.
- Public trials have been conducted before its official opening.