

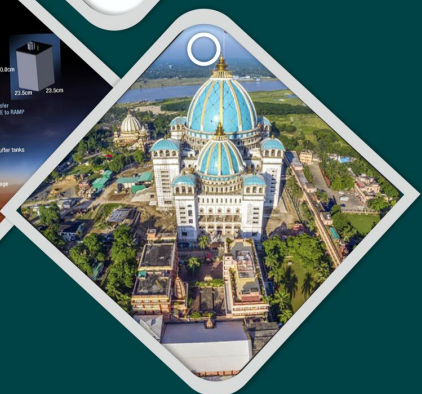
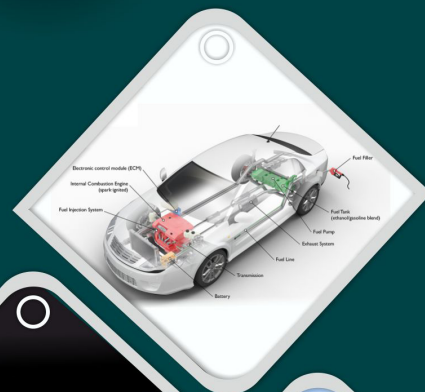


TRANSFORM IAS
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September - 2022

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TRANSFORM IAS
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September , 2022

Current Affairs

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Chapter- 1

ART AND CULTURE

Vedic Planetarium

Why in News

Vedic Planetarium, 'world's largest temple', to open in Bengal

Important Points

- The Temple of Vedic Planetarium in West Bengal's Mayapur will be the world's largest temple, bigger than Taj Mahal in Agra or St Paul's Cathedral in the Vatican.
- The countdown to the opening of what has been billed as 'the world's largest religious monument' - the Temple of Vedic Planetarium in Bengal's Mayapur district - continues.
- The temple - 130 km from Kolkata - will also serve as the headquarters of the International Society of Krishna Consciousness (ISKCON). It is expected to open by July or August 2023.
- The construction of the grand project started in 2010 and was initially planned to be completed by 2016, but the date was pushed back by a few years.
- Due to the Covid-19 pandemic, construction got further delayed and the opening date was pushed to next year.
- The Vedic Planetarium will house the Institute of Vedic Cosmology, which will research and discuss Vedic accounts of the universe. It will also offer a tour of parts of cosmic creation.



Here are some key features of Vedic Planetarium:

- The Temple of Vedic Planetarium in Bengal will reportedly have the biggest dome on a religious monument anywhere in the world.
- The monument is bigger than the Taj Mahal in Agra and St Paul's Cathedral in the Vatican City. It will also be among the tallest Hindu temples in the world.
- The temple is located in Mayapur in Nadia district of Bengal.

- The temple is being built at an estimated cost of \$100 million and can house about 10,000 devotees on each of its floors, where they can sing, pray and dance in front of Lord Krishna.
- It will be headed by Alfred Ford – the great-grandson of renowned businessman Henry Ford and the future owner of Ford Motor Company – who changed his name to Ambarish Das in 1975 after joining ISKCON. He gave \$30 million for the infrastructure.
- The temple has been lined with blue Bolivian marble, sourced partly from Vietnam.
- The temple is envisioned by Acharya Prabhupada, who wanted a structure that would spread awareness about Vedic science.
- The planetarium has a huge rotating model that illustrates how the planetary systems move as described in holy books like the Bhagavata Purana.
- Mayapur is also the birthplace of Chaitanya Mahaprabhu, 15th-century Indian Vaishnava saint considered to be the combined avatar of Radha and Krishna.
- ISKCON is reportedly in talks with the state tourism department to develop a city around the temple in Mayapur to draw devotees from around the world.

Nuakhai

Why in News

Nuakhai is an annual harvest festival celebrated in Odisha.

Important Points

- Nuakhai is an annual harvest festival in Odisha, celebrated to welcome the season's new rice.
- Celebrated a day after Ganesh Chaturthi, Nuakhai is the most auspicious and important social festival in Western Odisha.
- The much-awaited festival of western Odisha, Nuakhai, will be celebrated with Nabanna offering to Goddess Samaleswari.



- In Nuakhai, nua means new and khai means food. So, the festival of nuakhai is a festival to celebrate newly harvested food by the farmers.

- One day after the celebration of Ganesh Chaturthi, it is celebrated especially in the Western part of Odisha with much pump and jubilation.
- People staying in distant lands come back to their native places, wear new clothes and offer prayers before the God and eat delicious foods prepared from the newly harvested crops.
- Nuakhai is celebrated by people across socio-economic strata. The agrarian festival marks the harvest of the new rice paddy, in the land where agriculture is the primary occupation.
- The mountainous terrain of Western Odisha had tribals as its original inhabitants, who relied on hunting and food gathering for their sustenance.
- As the natives opted for a more settled way of life through farming, the festival served as a celebration that promoted the practice of agriculture.
- The preparation for Nuakhai begins well in advance. 'Safa-sutra' and 'Lipa-puchha' or the cleaning and mopping of the households are carried out by family members.
- The verandah and mud walls are adorned with 'Jhuti' which is akin to the Rangoli design. It is different from the more common Rangoli in being white only and drawn with fingers dipped in soaked rice powder.
- New clothes, usually of the traditional Sambalpuri fabric are bought for all family members. It is that day of the year when family members living in different cities and towns make it a point to return to their native place.
- Villages bustle with activity with friends and acquaintances getting to meet each other after one full year. The members of the extended family, if staying in separate households gather in their ancestral place.
- Early in the day, 'Nabanna' or the first harvested paddy is offered to the local deity of the region.
- Devi Samaleswari in Sambalpur, Pataneswari in Bolangir/Patnagarh, Manikeswari in Kalahandi, Sekharbasini in Sundergarh, and Sureswari in Sonepur are offered 'Nua' on a predetermined time called 'Lagna'.
- Once the rituals in the temples are accomplished, the celebration shifts to the individual households. The head of the family, who is usually the eldest family member, offers his prayers and performs the customary rituals. This is followed by distributing 'Nua' (rice grains) to every member.
- After thanking mother earth for providing them with food for their sustenance and the almighty for keeping them together for yet another year, the members consume the rice. This is followed by 'Nuakhai Juhar' where youngsters touch the feet of the elders to seek their blessings.
- Nuakhai is a festival that promotes mutual harmony and brotherhood. As farmers are struggling relentlessly with uncertainties like drought due to low rainfall, and diseases due to indiscriminate use of pesticides, the festival of Nuakhai celebrates their hard work and struggle.
- It also celebrates farming as an occupation at a time when most youngsters are abandoning agriculture to opt for less challenging options. It is that celebration which, year after year, reminds the residents of the ten districts of Western Odisha that they are linked by the same culture and tradition.

Martand Temple in Kashmir

Why in News

ASI had objected to the 'Navgrah Ashtamangalam Puja' on the premises of Martand Temple as it is a heritage site.

Important Points

- The Archaeological Survey of India (ASI) expressed displeasure over a religious 'pooja' conducted at the premises of the Martand Sun temple in Anantnag.
- The 'Navgrah Ashtamangalam pooja' at the ancient temple was attended by Jammu and Kashmir Lt Governor Manoj Sinha and Hindu seers.
- The ASI said that the Martand Sun Temple is one of the ASI-protected sites and as per the norms, no religious prayers can be held at such sites.
- The state government denied the allegations of violation by the ASI and made it clear that no permission was required for the Lt Governor to conduct 'pooja' at the Martand Sun temple, a monument protected by the Archaeological Survey of India.
- ASI had allowed shooting of the film 'Haider' at the temple
- While ASI has said that religious prayers can't be held at the ASI-protected site, they had previously allowed the shooting of the Bollywood film Haider at the temple.
- The song 'Bismil' from the movie starring Shahid Kapoor was shot at the temple, which had caused an outrage from the Kashmiri Hindus.



Martand Sun Temple

- The temple is said to have been built in the 8th century, but attempts were made to destroy it several times between 1389 and 1413.
- It is believed that Hindu ruler Lalitaditya had built the Martand Surya Temple in honor of the Sun God or Bhaskar in the 8th century AD. Lalitaditya was a Surya (Sun) Dynasty Kshatriya.
- The temple's style of construction and the expertise displayed in it was unprecedented in world history.
- The Vastu science of architecture has been employed, and the building is designed so that the Sun's rays fall on the Surya idol throughout the day.
- Though the cities, towns, and ruins of Lalitaditya's era are not easily located, the remnants of the large Martand temple, which the emperor had built at the pilgrimage site of the same name, are an example of the expertise of the Kashmiri Hindu builders of ancient times.
- Dedicated to Vishnu-Surya, the Martand Temple has three distinct chambers—the mandapa, the garbhagriha, and the antralaya—probably the only three-chambered temple in Kashmir. This points to the position it enjoyed.
- The temple is built in a unique Kashmiri style, though it has definite Gandhar influences.
- A major historical source for Kashmir's history remains Rajatarangini, written in the 12th century by Kalhana, and various translations of the work contain descriptions of Martand's grandeur.
- The temple is influenced by Classical Greco-Roman, Buddhist-Gandharan, and North Indian styles.

Ramon Magsaysay of the Philippines

Why in News

Former Kerala health minister K K Shailaja has declined her nomination for the 2022 Ramon Magsaysay Award

Important Points

- K K Shailaja said that in view of the anti-communist stance of Ramon Magsaysay, the former Philippines president whose legacy the prestigious award honours, and for its foundation's decision to consider her as an individual recipient for what was a state initiative, she had declined her nomination.

About Ramon Magsaysay Award:

- Launched in 1958, the Ramon Magsaysay Award, widely considered to be Asia's equivalent to the Nobel Prize, recognises outstanding leadership and communitarian contributions in Asia.

- This year's Shailaja was considered for the award for her performance as state health minister from 2016 to 2021, a period which saw Kerala fight against the Nipah virus and Covid-19.



Who was Ramon Magsaysay?

- Born on August 31, 1907 to a father who worked as a blacksmith and a mother who was a teacher, Ramon del Fierro Magsaysay Senior was the seventh president of the Philippines, from 1953 until his death in an air crash in 1957.
- Magsaysay started out as an automobile mechanic before being drafted into the Pacific War (1941-1945), during World War II.
- The Pacific War would see the Japanese occupation of the Philippines — then a colony of the US — for nearly four years. The US formally recognised the Philippines as an independent nation in 1946.

The Ramon Magsaysay Award

- In 1957, the Ramon Magsaysay award was set up by trustees of the Rockefeller Brothers Fund and the Philippine government to carry forward Magsaysay's legacy of service to the people, good governance, and pragmatic idealism.
- In the six decades since 1958 — the first year the Award was given out — over 300 organisations and individuals have been recognised for their developmental endeavours crucial to Asia, and, consequently, to the world.
- The award is given out every year on August 31, on Magsaysay's birth anniversary.

Indian winners on the list

- Prominent Indians who have won the award include Vinoba Bhave in 1958, Mother Teresa in 1962, Kamaladevi Chattopadhyay in 1966, Satyajit Ray in 1967, Mahasweta Devi in 1997. In recent years, Arvind Kejriwal (2006), Anshu Gupta of Goonj (2015), human rights activist Bezwada Wilson (2016), and journalist Ravish Kumar (2019) have won the award.

Dara Shikoh

Why in News

Vice President calls Dara Shikoh as torchbearer of social harmony

Important Points

- Vice President said that India has a glorious heritage of not only 'tolerance' for others' views, but a unique culture of 'engagement' with all views – a culture of pluralism and syncretism.

- The spirit of mutual respect was exemplified by Indian kings too – from the time of Ashoka the Great to the Mughal crown prince Dara Shikoh.
- Addressing a gathering after releasing the Arabic Version of “Majma Ul-Bahrain” of Dara Shikoh in New Delhi, the Vice President said Majma-ul-Bahrain (which means ‘Confluence of Two Oceans’) throws invaluable light on the similarities between religions and helped bring stronger unity among the people of India.
- Calling Dara Shikoh a genius, a skilled poet, and a Sanskrit scholar, the Vice President said that he was a torchbearer of social harmony and religious unity.
- In the book ‘Majma-ul-Bahrain’, Dara Shikoh listed one by one, all the commonalities between Hinduism (Vedanta) and Islam (Sufism) and came to the conclusion that the difference between Islam and Hinduism is only verbal.
- Mentioning that Dara Shikoh strove for improving dialogue between different religions, Shri Dhankhar called for reviving his legacy and applying his spiritual thought to strengthen social cohesion in the present times.
- On this occasion, a song ‘Atulya Bharat Desh Mera’ commemorating Azadi ka Amrit Mahotsav was also released. The song written and produced by Krishna Adhikari has been rendered by Anand Karki, renowned Ghazal singer of Nepal.

About Dara Shikoh

- Dara Shikoh was the eldest son and heir-apparent of the Mughal emperor Shah Jahan.
- He was born on 11 March 1615 in Ajmer, the land of Khwaja Moinuddin Chishti, to whom his father Shah Jahan had prayed for a son.
- He was designated with the title Padshahzada-i-Buzurg Martaba and was favored as a successor by his father and his older sister, Princess Jahanara Begum.
- He had developed a keen interest and proficiency in Sufi mysticism and the Quran at a young age.
- At the age of twenty-five, Dara wrote his first book, Safinat-ul-Awliya, a concise document detailing the lives of the Prophet and his family, the Caliphs and of saints belonging to the five major Sufi orders then popular in India.
- He was initiated into the Kadiri order of Sufis by his pir (spiritual guide), Mulla Shah.
- He was a follower of the Armenian Sufi-perennialist mystic Sarmad Kashani, as well as Lahore’s famous Qadiri Sufi saint Mian Mir, whom he was introduced to by Mullah Shah Badakhshi (Mian Mir’s spiritual disciple and successor).
- He had completed the translation of fifty Upanishads from their original Sanskrit into Persian in 1657 so that they could be studied by Muslim scholars.
- His translation is often called Sirr-i-Akbar (“The Greatest Mystery”), where he states boldly, in the introduction, his speculative hypothesis that the work referred to in the Qur’an as the “Kitab al-maknun” or the hidden book, is none other than the Upanishads.
- His most famous work, Majma-ul-Bahrain (“The Confluence of the Two Seas”), was also devoted to a revelation of the mystical and pluralistic affinities between Sufic and Vedantic speculation.
- He had also commissioned a translation of Yoga Vasistha.
- Other works by him include ‘Risala-i-hak Numa’ (The Compass of the Truth), the ‘Shathiyat or Hasanat-ul-Ariffin’ and the ‘Iksir-i-Azam’.
- He had developed a friendship with the seventh Sikh Guru, Guru Har Rai.
- In the war of succession which ensued after Shah Jahan’s illness in 1657, Dara was defeated by his younger brother Prince Muhiuddin (later, the Emperor Aurangzeb) in the Battle Deorai.
- He was executed in 1659 on Aurangzeb’s orders in a bitter struggle for the imperial throne.

Ambedkar Circuit

Why in News

Govt plans tourism circuit connecting Ambedkar sites

Important Points

- A tourism circuit connecting ‘Panch Teerth’, the five key sites associated with Bhim Rao Ambedkar, the founding father of the Indian Constitution, is among the key thrust areas of a tourism action plan being drawn up by the government.

- The circuit will focus on improving connectivity, enhancing tourism infrastructure, streamlining branding, and showcasing the connect the locations have with Ambedkar.
- At the three-day conference of state tourism ministers that kicked off in Dharamshala. Union Tourism ministry also said India will have its long-awaited revamped tourism policy before the the budget session of Parliament next year.
- The 'Panch Teerth' – key sites associated with Ambedkar – include his birthplace in Mhow, London, where he stayed and studied, Nagpur, also where he studied, Delhi, where he died, and Mumbai, where he was cremated.
- The government has been pursuing an integrated development of theme-based tourist circuits in the areas of eco-tourism, wildlife, Buddhist, desert, spiritual, Ramayana, Krishna, coastal, Northeast, rural, Himalayan, tribal and heritage.
- Apart from the development of theme-based circuits, the minister also said key thrust areas for the promotion of domestic tourism includes, among other things, wildlife, sustainable and home stay tourism, and will also focus on inviting private enterprise to invest more deeply in the tourism sector. The tourism action plan proposes to deploy 3000 rail coaches for promoting rail tourism in the country.
- The national conference of state tourism ministers, which is aimed at sharing best practices, successful projects, and tourism product opportunities, is also seeing the participation, for the first time, of West Bengal.
- The conference is important in the context of India's G20 presidency that begins later this year, and which aims to showcase India as a must-visit destination for the global audience.
- India has worked persistently to strengthen air connectivity and number of airports in India has increased from 74 in 2014 to 140 at present and will be further ramped up to 220 by 2025.
- The conference is divided into thematic sessions on Development of Tourism Infrastructure, Cultural, Spiritual & Heritage tourism, Tourism in the Himalayan states, Responsible and sustainable tourism, Role of digital technology for the marketing and promotion of tourism destinations, Emerging importance of homestays in the Indian hospitality sector, Ayurveda, Wellness, and Medical Value travel, and lastly on Forest and wildlife tourism.

PRASHAD Scheme

- It aims to strengthen the tourist facilities around spiritual locations, under which 39 projects have been sanctioned in 24 States.
- The infrastructure development at these tourists, pilgrimage and heritage destinations/cities focuses on cleanliness, security, universal accessibility, service delivery, skill development and livelihood of local communities.

Swadesh Darshan Scheme 2.0

- Launched with the objective to develop sustainable and responsible destinations following a tourist and destination-centric approach.
- It is a development of the previous Schemes and would and the objective is to evolve as a holistic mission to develop sustainable and responsible tourist destinations covering tourism and allied infrastructure, tourism services, human capital development, destination management and promotion backed by policy and institutional reforms.
- The national conference also aims to build a common vision for tourism and its growth as we move towards India 2047.
- The upcoming 25 years being the Amrit Kaal, the aim of the Conference is to begin a common conversation between the State and Central Governments for setting the vision for tourism in India in the year 2047.

Hindi Diwas 2022

Why in News

Every year, Hindi Diwas is celebrated on September 14.

Important Points

- Hindi is considered as one of the most important and major languages in India.

- Hindi Diwas is celebrated to honour the Hindi language. Hindi language connects the people with each other.
- The celebration of Hindi Diwas in India started after the independence of the country.
- Hindi was adopted as the national language in India by the Indian constitution on September 14, 1949.
- On 14 September 1949, the Constituent Assembly accepted Hindi written in Devanagari script as the official language of India.
- The main purpose was to celebrate this day and emphasize the value of the language.
- India is the country of different languages but Hindi and English language is the most spoken languages.
- Over 420 million people across the globe speak Hindi as a first language and around 120 million people speak it as a second language.
- The occasion of Hindi Diwas is important for all of us because it reminds us that Hindi is our primary language and we should respect it.
- Article 351 of the Constitution asked for the promotion and development of the Hindi language in a way that it could serve as a means of expression in all matters.
- According to the 2011 linguistic census, Hindi is the most widely spoken, with 52.8 crore individuals, or 43.6% of the population, declaring it as their mother tongue.

Interesting Facts about Hindi and Hindi Diwas

1. The poet Amir Khusro was the first writer who composed and released the first Hindi poem.
2. The term “Hindi” is actually derived from the Persian language and the first writer who wrote the book on the history of the Hindi language was not an Indian but was a French writer (Grasim the Taisi).
3. In 1977, Atal Bihari Vajpayee proudly showed respect for the Hindi language and presented a speech in the Hindi language to the United Nation.
4. Hindi was deemed a primary language under Article 343 of the Parliament on January 26, 1950.
5. Hindi made a debut on the internet by publishing the first Hindi journal in 2000 since then the Hindi language started leaving its influence on the World Wide Web and became so popular now.
6. Several Hindi words like ‘Achha’, and ‘Surya Namaskar’ have been included in the Oxford Dictionary.
7. Hindi is spoken in Nepal, New Zealand, UAE, Uganda, Fiji, Mauritius, Suriname, Guyana, Trinidad, Bangladesh, Pakistan and Tobago

Surjapuri and Bajjika dialects

Why in News

The Bihar government has recently asked to set up academies for the promotion of the Surjapuri and Bajjika dialects

Important Points

State government of Bihar has recently asked the state education department to set up academies for the promotion of the Surjapuri and Bajjika dialects on the lines of the Hindi and Urdu academies.

Surjapuri dialect-

- Surjapuri is spoken mainly in Kishanganj and other parts of Seemanchal in northeastern Bihar, including the districts of Katihar, Purnia and Araria.
- The dialect, a mix of Bangla, Urdu, and Hindi, is also spoken in contiguous parts of West Bengal.
- The name Surjapuri comes from Surjapur pargana, which no longer exists. But there is a toll plaza called Surjapur between Purnia and Kishanganj.
- Although Surjapuri has nothing specifically to do with religion, the largest share of speakers of the language is made up of Surjapuri Muslims, who live mainly in Kishanganj, the district that has about 70 per cent Muslim population.

**Bajjika dialect-**

- Bajjika, one of five dialects spoken in Bihar, is a mix of Hindi and Maithili, and is spoken mainly in Vaishali, Muzaffarpur, and parts of Sitamarhi, Sheohar and Samastipur.
- Bajjika is not as well known as other dialects such as Bhojpuri and Maithili.

Chapter- 2

POLITY & GOVERNANCE

Only 16% of human trafficking cases in 2021 saw convictions

Why in News

The conviction rate in human trafficking cases across the country continues to be low, according to the latest report of the National Crime Records Bureau (NCRB).

Important Points

- Police filed chargesheets in 84.7 per cent of the 2,189 cases registered under the Anti-Human Trafficking Units (AHTUs) across the country in 2021, only 16 per cent of the cases saw convictions.
- While the data on convictions was not available for 11 states, as many as eight states and three Union territories saw no convictions at all.
- The top performer was Jharkhand, which saw convictions in 84.2 per cent of the 92 cases that were registered in 2021.
- In 2020, police filed chargesheets in 85.2 per cent of the 1,714 trafficking cases that were registered, but only 10.6 per cent of the total cases saw convictions. Seven states reported no convictions while two reported a conviction rate of less than 2 per cent.
- The states and Union territories which reported zero convictions in 2021 are: Arunachal Pradesh, Assam, Goa, Haryana, Himachal Pradesh, Karnataka, Odisha, Telangana, Delhi, Chandigarh and Jammu and Kashmir.
- Of these, police had filed final chargesheets in over 90 per cent of the cases in Himachal Pradesh, Karnataka, Telangana; and in over 80 per cent of the cases in Goa and Haryana.
- The highest number of trafficking cases was registered in Telangana (347 cases), Maharashtra (320 cases), and Assam (203 cases).
- Over the last three years, Maharashtra, Andhra Pradesh and Telangana have seen the highest number of human trafficking cases, followed by Assam, Jharkhand, Kerala, Odisha and Rajasthan.
- Barring Telangana, all states saw a dip in cases in 2020, the first year of the pandemic which saw lockdowns.

What is human trafficking:

- Human Trafficking is the recruitment, transportation, transfer, harbouring or receipt of people through force, fraud or deception, with the aim of exploiting them for profit. Men, women and children of all ages and from all backgrounds can become victims of this crime, which occurs in every region of the world.
- The traffickers often use violence or fraudulent employment agencies and fake promises of education and job opportunities to trick and coerce their victims.

What are the constitutional & legislative provisions related to Trafficking in India?

- Trafficking in Human Beings or Persons is prohibited under the Constitution of India under Article 23 (1)
- The Immoral Traffic (Prevention) Act, 1956 (ITPA) is the premier legislation for prevention of trafficking for commercial sexual exploitation.
- Criminal Law (amendment) Act 2013 has come into force wherein Section 370 of the Indian Penal Code has been substituted with Section 370 and 370A IPC which provide for comprehensive measures to counter the menace of human trafficking including trafficking of children for exploitation in any form including physical exploitation or any form of sexual exploitation, slavery, servitude, or the forced removal of organs.
- Protection of Children from Sexual offences (POCSO) Act, 2012, which has come into effect from 14th November, 2012 is a special law to protect children from sexual abuse and exploitation. It provides precise definitions for different forms of sexual abuse, including penetrative and non-penetrative sexual assault, sexual harassment.

How has India implemented International Conventions on Trafficking?

- UN Convention: India has ratified the United Nations Convention on Transnational Organised Crime (UNC-TOC) which has as one of its Protocols Prevention, Suppression and Punishment of Trafficking in Persons, particularly Women and Children. Various actions have been taken to implement the convention and as per Protocol, Criminal Law Amendment Act, 2013² has been enacted wherein human trafficking has specifically been defined.

- SAARC Convention: India has ratified the SAARC Convention on Preventing and Combating Trafficking in Women and Children for Prostitution. A Regional Task Force was constituted to implement the SAARC Convention. Five meetings of Regional Task Force have been held so far. Fifth meeting was held at Paro, Bhutan from 11-12 April, 2013. As offered in Fifth Meeting, a study tour for SAARC Member countries was conducted from 18-22 November, 2013 to learn from the experiences of the Anti Human Trafficking Units (AHTUs) established in various districts of the country. Representatives of Sri Lanka, Bhutan and Afghanistan participated in the study tour.

Sanskrit as a national language

Why in News

The Supreme Court dismissed a Public Interest Litigation (PIL) seeking directions to notify Sanskrit as the national language.

Important Points

- SC said that the issue was in the realm of policy, requiring constitutional amendments which entailed detailed discussion in the Parliament and not in the realm of judiciary.
- No writ can be issued to Parliament for declaring a language as a national language,” the bench observed while dismissing the plea.
- The top court granted liberty to the petitioner to make appropriate representation before the authorities concerned.



- The PIL was filed by retired IAS officer and lawyer KG Vanzara who sought direction from the Central government to notify Sanskrit as the national language.
- The petitioner's lawyer invoked Sanskrit as a "mother language" from which other tongues took inspiration. He repeatedly invoked oriental scholar Sir William Jones and his study of the ancient language.
- The plea sought a direction to the Central government to notify Sanskrit as the national language saying such a move will not disturb the current Constitutional provisions which provide for English and Hindi as official languages of the country.
- National Language of India: As per the Constitution, India has not given any language a national status.

Status of Hindi

- Under Article 343 of the Constitution, the official language of the Union shall be Hindi in Devanagari
- English would continue to be used for a period of 15 years.
- Official Languages Act, 1963 was passed in anticipation of the expiry of the 15-year period during which the Constitution originally allowed the use of English for official purposes.
- Article 351 (Union government to promote the use of Hindi).

Rules relaxed for IAS, and IPS officers to serve in J&K

Why in News

Centre relaxes rules for All India services & Central services to serve in J&K

Important Points

- The Centre has relaxed the norms (deputation) to encourage the All India Services (AIS) and other Central Services officers to get posted in Jammu and Kashmir.
- The Union Territory is reeling from a shortage of officers since 2019 after the former State of J&K was split into two, Ladakh being the other UT.
- The deputation rules have been relaxed by the Department of Personnel & Training (DoPT) to encourage the posting of the Indian Administrative Services (IAS) and the other central services officers to J&K.

Key highlights-

The following requirements have been waved off-

- The cooling off period.
- The stringent norms for inter-cadre deputation.
- Inter-cadre deputation is only given under compelling circumstances, one being marriage, now the norms have been liberalised.
- With this relaxation, more than twenty officers belonging to various services and different cadres have been posted in Jammu & Kashmir at various levels at a crucial time.

What is deputation of AIS officers?

- Every State cadre of the service provides for a Central deputation quota which in turn requires additional recruitment to be made to the service to provide for trained and experienced members to serve on posts in the Central Government.
- When an officer is appointed from outside the cadre or from outside the direct line of promotion for a limited period by the end of which he will have to revert to his parent cadre, he is known to be on deputation or on short-term contract.

Current rules on deputation

- The Centre asks every year for an "offer list" of officers of the All India Services (IAS, IPS and Indian Forest Service) willing to go on central deputation, from which it selects officers.
- At any point it cannot be more than 40% of the total cadre strength.
- The Centre mandates the state governments to provide a list of officers, the officer too must be willing, with Rule 6(2) stating: "no cadre officer shall be deputed to any organization or body of the type referred to in item (ii), except with his consent".
- Central deputation in the Indian Administrative Service is covered under Rule-6 (1) of the IAS (Cadre) Rules-1954, inserted in May 1969.
- It states that a cadre officer may, with the concurrence of the State Governments concerned and the Central Government, be deputed for service under the Central Government or another State Government or under a company, association or body of individuals, whether incorporated or not, which is wholly or substantially owned or controlled by the Central Government or by another State Government.
- Provided that in case of any disagreement, the matter shall be decided by the Central Government and the State Government concerned shall give effect to the decision of the Central Government.

EC's move to weed out shady political parties

Why in News

Income Tax officials carried out pan-India raids on registered unrecognized political parties (RUPPs).

Important Points

- Thousands of Registered Unrecognised Political Parties (RUPPs) have sprung up over the years, with little or negligible political activity to show.

ECI's Investigation on RUPPs

- The ECI has been continuously investigating RUPPs and 86 RUPPs have been found to be non-existent either after a physical verification carried out by the respective Chief Electoral Officers of States/UTs concerned or based on reports of undelivered letters/notices from the Postal Authority sent to the registered

address of RUPPs.

- The ECI had delisted 87 and 111 RUPPs taking the number of delisted RUPPs to 284.
- In its investigation, the ECI unearthed that the 253 parties, 66 RUPPs actually applied for a common symbol as per para 10B of the Symbol's Order 1968 and did not contest the respective elections.
- The privilege of a common symbol is given to RUPP based on an undertaking for putting up at least 5 per cent of total candidates with regard to the said legislative assembly election of a state.
- RUPPs are political parties whose vote share is below a threshold needed for recognition. ECI data showed 2,796 RUPPs a year ago, a 300% increase over two decades.
- 86 non-existent RUPPs have been deleted from the list of register of RUPPs and render themselves liable to be not entitled to have benefits under the Symbols Order, 1968.
- 253 RUPPs are marked as 'Inactive RUPPs' in the register of RUPPs maintained by the commission under section 29A of the Representation of People Act, 1951.

I-T cracks down on RUPPs

- Income Tax officials carried out pan-India raids on registered unrecognised political parties (RUPPs), following up on an earlier probe into their murky financial transactions.
- These raids need to be located in a larger clean-up process initiated by the Election Commission. It's a good move and should be carried to its logical conclusion.
- The problem stems from an unrealistic assumption that underpins income tax benefits given to political parties. It's that tax exemptions combined with funding anonymity will strengthen electoral democracy and not lead to abuse.
- The combination of tax exemptions, funding anonymity and easy registration is a system ripe for abuse.
- The introduction of electoral bonds, which are promissory notes payable to the bearer on demand, is problematic.
- In fact, it poses more of a threat to the integrity of the electoral system as it not only allows anonymous contributions without a ceiling, it also opens the door to more problematic sources of funding political parties.

Sikh Gurudwara (Management) Act 2014

Why in News

Supreme Court Upholds Validity Of Haryana Sikh Gurudwara (Management) Act 2014

Important Points

- The Supreme Court upheld the validity of the Haryana Sikh Gurdwara (Management) Act, 2014, under which a separate committee was formed to manage the affairs of gurdwaras in the state, saying affairs of the religious minority in the state i.e. Sikhs were left in the hands of the Sikhs alone.
- SC bench said that since the affairs of the Sikh minority in the State are to be managed by the Sikhs alone, therefore, it cannot be said to be violative of any of the fundamental rights conferred under Articles 25 and 26 of the Constitution.
- SC dismissed two petitions filed eight years ago seeking quashing of the Haryana Sikh Gurdwara Act, 2014 which came into force on July 14, 2014.
- The Bench – which also included Justice Vikram Nath – noted that the Haryana Act was similar to the Sikh Gurdwaras Act, 1925 having similar provisions of constituting a committee to manage Gurudwara affairs under Section 3 of the Haryana Act.
- Therefore, the affairs of the religious minority in the State i.e., Sikhs are left in the hands of the Sikhs alone in the same manner as was under the 1925 Act.
- The Haryana Act also provides for Haryana Sikh Gurdwara Judicial Commission in the same manner as is provided under the 1925 Act. The affairs of the Gurdwara are again required to be managed by the local Gurdwara Committee.
- There were two petitions against the Haryana Act – first by Harbhajan Singh – an elected representative of Shiromani Gurdwara Parbandhak Committee from Kurukshetra and the second one by the SGPC.
- Singh challenged the 2014 Act on the ground that it's against the constitutional provisions, the statutory provisions of the Punjab Reorganisation Act, 1966 and was also divisive in its intention to create dissension among Sikhs. The petitioners also challenged the 2014 Act on the ground that it violated the fundamental right to religion of Sikhs.
- The petitioners under contended that Section 72 of the Punjab Reorganisation Act, 1966, the power to make laws in respect of the SGPC as an inter-state body corporate has been reserved with the central government only and there was no provision in law for any bifurcation by enacting a state legislation.
- Terming it a hasty enactment, the petitioners had submitted that it's not only against the provisions of the

Punjab Reorganisation Act but was also divisive in its intention to create dissension amongst followers of Sikh religion.

- The Centre had contended that only Parliament had the exclusive power to enact law on the subject. "There is no justification for the Haryana State Legislature to have passed a law on the same subject matter, taking away the jurisdiction of the Board constituted under the 1925 Act."
- The SGPC became inter-State body corporate not because of Entry 44 List I (Union List under Seventh Schedule) but because of reorganisation of the territories of the erstwhile State of Punjab. Therefore, Entry 44 would have no applicability in respect of legislative competence of the State of Haryana to enact the Haryana Act.
- Holding that incorporation of a statutory body fell in Entry 32 of List II (State List under Seventh Schedule), as also unincorporated religious and other societies," the top court concluded that the Haryana Act was within the legislative competence of the state.
- The transitional provisions i.e., the 1966 Act or the 1957 Act do not impinge upon the legislative competence of the State legislature to enact a law on the subjects mentioned in the List II, court said.

Article 25 guarantees the freedom of conscience, the freedom to profess, practice, and propagate religion to all citizens.

- This article also gives a provision that the State can make laws:
- That regulates and restricts any financial, economic, political, or other secular activity associated with any religious practice.
- That provides for the social welfare and reform or opening up of Hindu religious institutions of a public character to all sections and classes of Hindus. Under this provision, Hindus are construed as including the people professing the Sikh, Jain, or Buddhist religions, and Hindu institutions shall also be construed accordingly.
- People of the Sikh faith wearing & carrying the kirpan shall be considered as included in the profession of the Sikh religion.

Article 26

This Article provides that every religious denomination has the following rights, subject to morality, health, and public order.

- The right to form and maintain institutions for religious and charitable intents.
- The right to manage its own affairs in the matter of religion.
- The right to acquire the immovable and movable property.
- The right to administer such property according to the law.

Death Sentences

Why in News

Supreme Court wants constitution bench to set norms for death sentences

Important Points

- The Supreme Court referred to a five-judge Constitution bench a suo motu case concerning the framing of uniform guidelines for the trial courts on granting "real and meaningful opportunity" on the issue of the sentence to the convicts held guilty for offences entailing capital punishment
- The top court said that this order is necessitated due to a difference of opinion and approach amongst various judgements, on the question of whether, after recording a conviction for a capital offence, under law, the court is obligated to conduct a separate hearing on the issue of sentence.

Under scrutiny

A look at the issues before the Supreme Court

■ SC acknowledges the need to give accused in death penalty cases "meaningful, real and effective" hearing on mitigating circumstances

■ It finds that past judgments do not address the "sufficient time"

accused may need to present his or her mitigating circumstances before the trial court

■ SC discusses need to form a uniform framework for trial judges to determine mitigating factors in death penalty cases



- A bench of Chief Justice UU Lalit and Justices S Ravindra Bhat and Sudhanshu Dhulia referred to various verdicts on the issue passed by different benches of the apex court including in a 1983 judgement of Bachan Singh versus State of Punjab.
- Here the top court, in its majority judgment, upheld the constitutional validity of the death sentence, on the condition that it could be imposed only in the “rarest of rare” cases.
- The bench said this court in Bachan Singh (1983 verdict) had taken into consideration the fairness afforded to a convict by a separate hearing, as an important safeguard to uphold the imposition of the death sentence in the rarest of rare cases, by relying upon the recommendations of the 48th Law Commission Report.

IN THE COURTS	
➤ SC stays for a week Centre's decision to dismiss Guj cadre IPS officer Satish Chandra Verma who probed Ishrat Jahan encounter P 10 ➤ SC seeks responses of Centre, Central Council of Indian Medicine on PIL saying legislations allowing AYUSH practitioners to prescribe allopathic medicines and conduct surgeries would endanger lives P 13 ➤ “Baffled” by talk in media on Waqf Act, SC points out Hindus have similar right under Endowment Act P 13 ➤ Only one suicide bombing in India shows the faith Muslims have in the country, say petitioners in hijab case P 10	➤ Bombay HC rejects bail plea of Hany Babu in Elgar case, says reasonable grounds to believe NIA charges of plotting and abetting terror P 10 ➤ Special PMLA court takes cognizance of ED chargesheet saying “new evidence” points to Sena MP Sanjay Raut's “major role” in siphoning off money in ₹1,034 crore redevelopment case P 12 ➤ Patna high court raps excise department officers for “non-application of mind in implementation of the prohibition law” P 10 ➤ Marriage not for merely satisfying carnal pleasures, but extension of familial chain, says Madras high court P 10

- The bench said that in the 1983 verdict the court was conscious of the safeguard of a separate hearing, on the question of sentence, and articulated such a safeguard as a valuable right, which ensures to a convict, to urge why in the circumstances of his or her case, the extreme penalty of death ought not to be imposed.
- It added that a common thread that runs through all these decisions (referred verdicts of the apex court) is the express acknowledgement that a meaningful, real and effective hearing must be afforded to the accused, with the opportunity to adduce material relevant for the question of sentencing but what is conspicuously absent, is consideration and contemplation about the time this may require.
- The bench noted that it is also a fact that in all cases where the imposition of capital punishment is a choice of the sentence, aggravating circumstances would always be on the record, and would be part of the prosecution's evidence, leading to conviction, whereas the accused can scarcely be expected to place mitigating circumstances on the record, for the reason that the stage for doing so is after conviction.
- Top Court suggested that the social milieu, the age, educational levels, whether the convict had faced trauma earlier in life, family circumstances, psychological evaluation of a convict, and post-conviction conduct, were relevant factors at the time of considering whether the death penalty ought to be imposed upon the accused.

Schedule Tribes

Why in News

Cabinet nod to revisions in Schedule Tribes lists of four states

Important Points

- The Union cabinet approved the inclusion of several communities in the Schedule Tribes list of the Constitution across 4 states, as part of the Constitution (Scheduled Tribes) Order (Amendment) Bill 2022.
- The change includes granting tribal status to the Hatti community living in the Trans-Giri region of Himachal Pradesh,
- In Tamil Nadu, it proposes the inclusion of 'Narikoravan' and 'Kurivikkaran' communities in the list of state's STs.
- Government of India has decided to include Hatti community of Sirmaur district of Devbhoomi Himachal in the Scheduled Tribes. This will benefit 1.60 lakh people in Himachal Pradesh
- In Karnataka inclusion of communities, namely, 'Betta-Kuruba' community as a synonym of 'Kadu Kuruba' at serial number 16 in the state's ST list, has been suggested.
- In Chhattisgarh, similar sounding names have been added to 12 existing tribes in the ST list, and many different Hindi spellings were changed or added, while maintaining the English names.
- In Uttar Pradesh, the Gond tribe, along with its five sub-castes, was already approved for inclusion in the ST list for the state. The changes were approved for four districts in Uttar Pradesh — Kushinagar, Sant Ravidas Nagar, Chandauli and Sant Kabir Nagar.
- After the Bill becomes an Act, member of the communities newly listed in the revised list of Scheduled Tribes of (the states) will also be able to derive benefits meant for STs under the existing schemes of the Government.
- Some of the major schemes include Post Matric Scholarship, National Overseas Scholarship, National Fellowship, Top Class Education, Concessional Loans from National Scheduled Tribes Finance and Development Corporation, Hostels for ST boys and girls etc.
- In addition, they will also be entitled to benefits of reservation in services and admission to educational institutions as per Government policy.
- The Bill has to pass through both houses of the Parliament, the Lok Sabha and the Rajya Sabha.

How is a community added or removed from SC, ST lists?

- The process begins at the level of a State or Union Territory, with the concerned government or administration seeking the addition or exclusion of a particular community from the SC or ST list.
- The final decision rests with the President's office issuing a notification specifying the changes under powers vested in it from Articles 341 and 342.
- The inclusion or exclusion of any community in the Scheduled Tribes or Scheduled Castes list come into effect only after the President assents to a Bill that amends the Constitution (Scheduled Castes) Order, 1950 and the Constitution (Scheduled Tribes) Order, 1950, as is appropriate, after it is passed by both the Lok Sabha and Rajya Sabha.
- A State government may choose to recommend certain communities for addition or subtraction from the list of SCs/STs based on its discretion.
- Following this, the proposal to include or remove any community from the Scheduled List is sent to the Union Ministry of Tribal Affairs from the concerned State government.
- After this, the Ministry of Tribal Affairs, through its own deliberations, examines the proposal, and sends it to the Registrar General of India (RGI).
- Once approved by the RGI, the proposal is sent to the National Commission for Scheduled Castes or National Commission for Scheduled Tribes, following which the proposal is sent back to the Union government, which after inter-ministerial deliberations, introduces it in the Cabinet for final approval.

What is the criteria to begin the process?

To establish whether a community is a Scheduled Tribe, the government looks at several criteria, including its:

- ethnological traits,
- traditional characteristics,
- distinctive culture,
- geographical isolation and
- backwardness.

How many Scheduled Tribes are there officially?

- According to the Scheduled Tribes in India as revealed in Census 2011, there are said to be 705 ethnic groups listed as Scheduled Tribes under Article 342.
- Over 10 crore Indians are notified as STs, of which 1.04 crore live in urban areas. The STs constitute 8.6% of the population and 11.3% of the rural population.

Chapter- 3

ENVIRONMENT AND ECOLOGY

The abysmal state of heritage conservation

Why in News

CAG report reveals the abysmal state of heritage conservation

Important Points

- The Centre issued a notification to take steps to protect the Anang Tal , after which it would be declared a monument of national importance.
- CAG's performance audit on Preservation and Conservation of Monuments and Antiquities that was tabled in Parliament singled out the poor state of heritage conservation across India.
- The CAG reports on the state of India's heritage — ranging from those relating to museums in 2011 to its findings on the ASI in 2013 — are the most comprehensive public documents on the institutional malaise that dogs the conservation of our monuments and antiquities.
- Some of the key observations of the 2022 report are:
- The absence of effective national policy: The CAG report categorically notes that there is no national policy on archaeological exploration and excavation.
- Less money being allocated: The ASI budget for exploration and excavations is less than 1 per cent even though it informed the Public Accounts Committee (PAC) of its intention to raise the allocation to 5 per cent of the total budget.
- Lack of Coordination: There is no synergy between the different agencies involved in heritage conservation.
- The National Culture Fund, established in November 1996, to rope in individuals and corporate groups to fund conservation, has utilised only 14 per cent of its funds because of the lack of coordination with the ASI
- The National Monuments Authority, a statutory body for implementing heritage by-laws and site plans for each monument, has only finalised and notified 31 monuments, while those relating to the 210 more are in different stages of finalisation.
- The report reveals that the ASI, in many cases, has been working in violation of the provisions of the Monuments (AMASR) Act.
- Dumping of garbage and sewage: The auditing team's visit revealed that sewage from nearby areas "was being discharged into many lakes".

AMASR Act

AMASR Act, 1958 is an act of parliament of the government of India that provides for the preservation of ancient and historical monuments and archaeological sites and remains of national importance, for the regulation of archaeological excavations and for the protection of sculptures, carvings and other like objects.

Single-use plastics

Why in News

MoEFCC has notified the Plastic Waste Management Amendment Rules, 2021

Important Points

- Government of India, has notified the Plastic Waste Management Amendment Rules, 2021, which prohibits identified single use plastic items which have low utility and high littering potential by 2022.

- Pollution due to single use plastic items has become an important environmental challenge confronting all countries. India is committed to take action for mitigation of pollution caused by littered Single Use Plastics.
- In the 4th United Nations Environment Assembly held in 2019, India had piloted a resolution on addressing single-use plastic products pollution, recognizing the urgent need for the global community to focus on this very important issue.
- The adoption of this resolution at UNEA 4 was a significant step.
- The manufacture, import, stocking, distribution, sale and use of following single-use plastic, including polystyrene and expanded polystyrene, commodities shall be prohibited with effect from the 1st July, 2022:-
 - Ear buds with plastic sticks, plastic sticks for balloons, plastic flags, candy sticks, ice-cream sticks, polystyrene [Thermocol] for decoration;
 - Plates, cups, glasses, cutlery such as forks, spoons, knives, straw, trays, wrapping or packing films around sweet boxes, invitation cards, and cigarette packets, plastic or PVC banners less than 100 micron, stirrers.
- In order to stop littering due to light weight plastic carry bags, with effect from 30th September, 2021, the thickness of plastic carry bags has been increased from fifty microns to seventy five microns and to one hundred and twenty microns with effect from the 31st December, 2022. This will also allow reuse of plastic carry due to increase in thickness.
- The plastic packaging waste, which is not covered under the phase out of identified single use plastic items, shall be collected and managed in an environmentally sustainable way through the Extended Producer Responsibility of the Producer, importer and Brand owner (PIBO), as per Plastic Waste Management Rules, 2016.
- For effective implementation of Extended Producer Responsibility the Guidelines for Extended Producer Responsibility being brought out have been given legal force through Plastic Waste Management Amendment Rules, 2021.
- The waste management infrastructure in the States/UTs is being strengthened through the Swachh Bharat Mission. The following steps have also been taken to strengthen implementation of Plastic Waste Management Rules, 2016 and also to reduce the use of identified single use plastic items:
 - the States/UTs have been requested to constitute a Special Task Force for elimination of single use plastics and effective implementation of Plastic Waste Management Rules, 2016. A National Level Taskforce has also been constituted by the Ministry for taking coordinated efforts to eliminate identified single use plastic items and effective implementation of Plastic Waste Management Rules, 2016.
- To encourage innovation in development of alternatives to identified single use plastic items and digital solutions to plastic waste management, the India Plastic Challenge – Hackathon 2021, has been organized for students of Higher Educational Institutions and startups recognized under Startup India Initiative.

What is single-use plastic?

- As the name suggests, it refers to plastic items that are used once and discarded. E.g., plastics used in packaging items, bottles (shampoo, detergents, cosmetics), polythene bags, face masks, coffee cups, cling film, trash bags, food packaging etc.

Greenhouse gas

Why in News

Greenhouse gas and sea levels reached record highs in 2021

Important Points

- Greenhouse gas and sea levels touched new highs in 2021, according to a report by the United States National Oceanic and Atmospheric Administration (NOAA).
- The amount of greenhouse gases in the atmosphere was 414.7 parts per million in 2021, which is 2.3

parts higher than in 2020, according to the NOAA report.

- The rise in greenhouse gas levels has been due to easing fossil fuel emissions last year, as much of the global economy has slowed sharply due to the COVID-19 pandemic.
- Sea levels rose for the tenth year in a row. They reached a new record of 3.8 inches or 97 millimetres above the average for 1993, when satellite measurements began.
- The year 2021 was among the seven-warmest years since global records began in the mid-to-late 1800s. It was also one of the six-warmest years on record as measured by global mean surface temperature.
- The low average temperature was due to La Nina, an occasional phenomenon in the Pacific that cools waters. La Nina prevailed for all but two months of the year — June and July.
- The month of February had the smallest temperature anomaly of the year for the globe and was the coldest since February 2014.
- But water temperatures were also exceptionally high. Lakes in Tibet, an important region since it is a water source for many of Asia's major rivers, recorded high temperatures

Growing disasters and fears

- Tropical storms, which increase as the Earth warms, spiked in 2021, the report said. These included Super Typhoon Rai, which killed nearly 400 people in the Philippines in December. Hurricane Ida wrought havoc in the Caribbean before becoming the second most dangerous storm to kill people in Louisiana after Katrina.
- Among other extraordinary events mentioned in the report was the premature blooming of cherry trees in Kyoto, Japan, for the first time after 1409.
- The incidence of wildfires, which are also expected to increase due to climate change, was comparatively low after recent years, although devastating fires were seen in both the American West and Siberia.
- The 2021 report comes days after a study said Greenland's ice sheet is already beginning to melt to dangerous levels, even as it will raise sea levels without any heat in the future. This is expected to submerge the homes of hundreds of millions of people living in low-lying areas around the world.
- The goal to limit temperatures above pre-industrial levels to 1.5 degrees Celsius to avoid the worst effects of climate change was set by the Paris Climate Agreement in 2015.

Green hydrogen

Why in News

Betting on green hydrogen to fulfil energy needs 'risky', finds study.

Important Points

- Countries have been betting on green hydrogen — hydrogen produced from splitting water using renewable energy — to meet their climate goals. But a new study has warned against relying on this green technology, calling it a "risky bet".
- Its supply will likely remain scarce in the short-term and uncertain in the long term even if its growth is at par with solar and wind energy.
- Green hydrogen would likely supply less than 1 per cent of final energy globally by 2035.
- The European Union could reach the 1 per cent mark by 2030, as energy prices are soaring, the paper stated.
- The EU set a target of achieving 10 million tonnes of domestic renewable hydrogen production May 18, 2022.
- It plans 10 million tonnes of imports by 2030 to replace natural gas, coal and oil in certain industries and transport sectors.
- The challenges in ramping up the supply of electrolyzers — a device in which green hydrogen is produced — were analysed by researchers from Germany and the United States.
- Green hydrogen would remain scarce in the short term, leading to a supply-demand gap even if the technology grows at rates similar to solar and wind, showed the analysis.

- Global electrolyser capacity needs to grow 6,000-8,000-fold by 2050 to contribute to climate neutrality scenarios compatible with the Paris Agreement.
- In contrast, the more available and cost-competitive option of renewable power needs to grow by 10-fold, the experts highlighted.
- However, the study offers some hope. Implementing strong policies could reverse the setbacks.
- Hydrogen incentives may help sectors where no other alternatives exist, such as steel, or power supply in hours of low wind and solar electricity generation.
- The researchers recommended accelerating the roll-out of crucial zero-carbon technologies like electric mobility and heat pumps.
- Green hydrogen is defined as hydrogen produced by splitting water into hydrogen and oxygen using renewable electricity. This is a very different pathway compared to both grey and blue.
- Grey hydrogen is traditionally produced from methane (CH₄), split with steam into CO₂ – the main culprit for climate change – and H₂, hydrogen.
- Grey hydrogen has increasingly been produced also from coal, with significantly higher CO₂ emissions per unit of hydrogen produced, so much that is often called brown or black hydrogen instead of grey.
- It is produced at industrial scale today, with associated emissions comparable to the combined emissions of UK and Indonesia. It has no energy transition value, quite the opposite.
- Blue hydrogen follows the same process as grey, with the additional technologies necessary to capture the CO₂ produced when hydrogen is split from methane (or from coal) and store it for long term.
- It is not one colour but rather a very broad gradation, as not 100% of the CO₂ produced can be captured, and not all means of storing it are equally effective in the long term.
- The main point is that capturing large part of the CO₂, the climate impact of hydrogen production can be reduced significantly.

Color	GREY HYDROGEN	BLUE HYDROGEN	TURQUOISE HYDROGEN*	GREEN HYDROGEN
Process	SMR or gasification	SMR or gasification with carbon capture (85-95%)	Pyrolysis	Electrolysis
Source	Methane or coal 	Methane or coal 	Methane 	Renewable electricity 

Tipping Points

Why in News

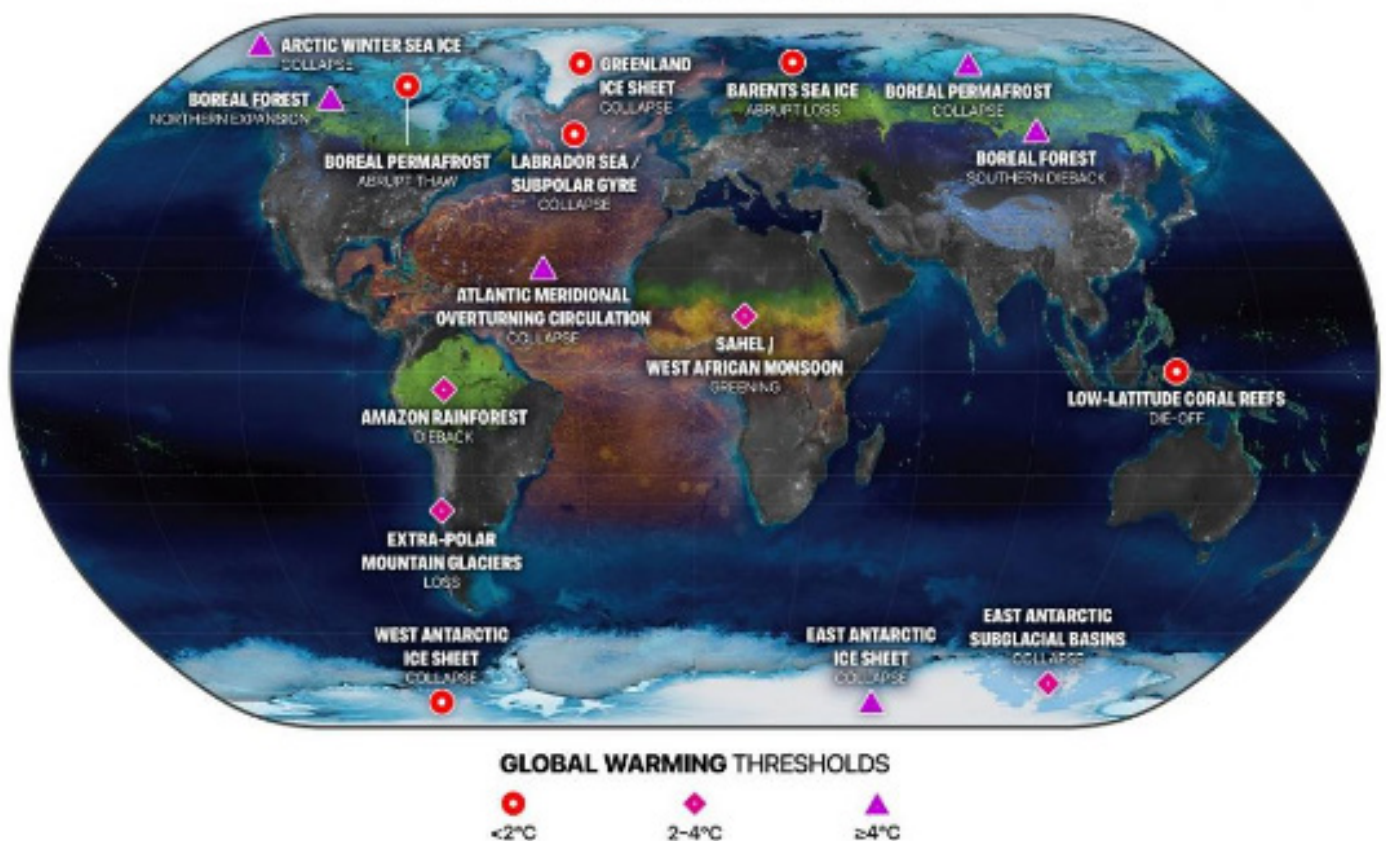
Scientist's sound alarm as number of climate tipping elements rises

Important Points

- There are certain large-scale systems on Earth which are essential for its sustenance. Scientists call them 'climate tipping elements'.
- There are certain thresholds of these elements known as 'tipping points', beyond which even a slight change in them can become unstoppable, leading to catastrophic consequences.
- Scientists who first identified and assessed climate tipping elements and their tipping points in 2008, have reassessed them.

- They found that while some of the tipping points may have been crossed or are close to being crossed at 1.1 degrees Celsius of warming since pre-industrial times, more of them would be crossed as the planet warmed further.
- The researchers, who published their findings in a research paper published in the journal Science also increased the probable number of climate tipping elements from nine to 16.
- Of the 16, the research team categorised nine as 'core tipping elements' affecting the climate of the Earth in general.
- The remaining seven were categorized as 'regional tipping elements' that had an impact on the climate of various regions but could also interact with climate elements from other regions, creating cascading impacts and crossing of tipping points.

CLIMATE TIPPING ELEMENTS



- The Amazon rainforest is an example of a core tipping element while the west African monsoon is considered to be a regional tipping element.
- Current levels of warming may trigger the melting and collapse of the West Antarctic Ice Sheet, a similar event for the Greenland Ice Sheet, thawing of the permafrost, collapse of the Labrador Sea convection and massive die-off of tropical coral reefs.
- Once a climate tipping element passes a tipping point, even if temperature rise is arrested then and there, the system would further collapse into oblivion. This may take decades to thousands of years in the case of ice sheets, raising sea levels by many metres gradually.
- The collapse of the ice sheets can lead to sea level rise, in turn, leading to gradual subsidence and submergence of many small island countries.
- The die back of large and complex ecosystems such as coral reefs could lead to unfathomable losses to biodiversity.
- Countries of the world have to bring down their greenhouse gas emissions and limit warming to less than 1.5°C as agreed under the Paris Agreement of the United Nations Framework Convention on Climate Change.
- The risks of crossing the tipping points steadily increases after this point, with it being highest beyond 2°C of warming.

Warming level	Tipping Points possible/likely at this level
Current (2022) (1.1-1.2°C)	0 likely 5 possible (Greenland Ice Sheet [GrIS] from 0.8°C, West Antarctic Ice Sheet [WAIS] from 1.0°C, Labrador-Irminger Sea Convection [LABC] from 1.1°C, Low-latitude coral reefs [REEF] from 1.0°C, Boreal permafrost abrupt thaw [PFAT] from 1.0°C)
Paris Agreement, full ambition (1.5°C)	4 likely (GrIS from 1.5°C, WAIS from 1.5°C, REEF from 1.5°C, PFAT from 1.5°C) 6 possible (LABC from 1.1°C, Atlantic Meridional Overturning Circulation [AMOC] from 1.4°C, Barents sea ice [BARI] from 1.5°C, Mountain glaciers [GLCR] from 1.5°C, Boreal forest (southern dieback) [BORF] from 1.4°C, Boreal forest (northern expansion) [TUND] from 1.5°C)
Paris Agreement, full range (1.5-2°C)	6 likely (GrIS from 1.5°C, WAIS from 1.5°C, REEF from 1.5°C, PFAT from 1.5°C, BARI from 1.6°C, LABC from 1.8°C) 4 possible (AMOC from 1.4°C, GLCR from 1.5°C, BORF from 1.4°C, TUND from 1.5°C)
Current policies, best estimate (~2.6°C, based on Meinshausen et al., 2022)	7 likely (GrIS from 1.5°C, WAIS from 1.5°C, REEF from 1.5°C, PFAT from 1.5°C, BARI from 1.6°C, LABC from 1.8°C, GLCR from 2°C) 6 possible (AMOC from 1.4°C, BORF from 1.4°C, TUND from 1.5°C, East Antarctic subglacial basins [EASB] from 2°C, Amazon rainforest [AMAZ] from 2°C, Sahel vegetation & West African Monsoon [SAHL] from 2°C)
Current policies, full range (1.9-3.7°C, based on Meinshausen et al., 2022)	10 likely (GrIS from 1.5°C, WAIS from 1.5°C, REEF from 1.5°C, PFAT from 1.5°C, BARI from 1.6°C, LABC from 1.8°C, GLCR from 2°C, EASB from 3°C, AMAZ from 3.5°C, SAHL from 2.8°C) 4 possible (AMOC from 1.4°C, BORF from 1.4°C, TUND from 1.5°C, Boreal permafrost (collapse) [PFTP] from 3°C)

Green Fins Hub

Why in News

UNEP launches new worldwide digital platform to encourage sustainable marine tourism

Important Points

- The United Nations Environmental Programme (UNEP), along with UK-based charity Reef-World Foundation, recently launched the Green Fins Hub, a global digital platform they said would give sustainable marine tourism a 'major boost'.
- The platform will help diving and snorkelling operators worldwide to make simple, cost-efficient changes to their daily practices by utilising tried and tested solutions.
- It would also help them keep track of their annual improvements and communicate with their communities and customers.
- Green Fins Hub will host two types of membership. One would be digital membership available for diving, snorkelling and liveaboard operations globally.
- Throughout every year of membership, operators will receive environmental scores based on a detailed online self-evaluation and progress made on their action plans.
- Green Fins Certified Members will continue to be assessed annually and trained in person at their operation. The assessment process will continue to be based on set criteria using a scoring system (0-330 point system, with a low score implying low impact of a business on coral reefs).
- There will be a minimum threshold (>200 of a maximum environmental impact score) for becoming a Green Fins Certified Member and a ranking of bronze, silver or gold certified members according to performance.

- The platform will have other features too. The Green Fins Community Forum will be for operators around the world to raise industry needs, discuss environmental issues and share lessons and ideas with like-minded industry leaders, non-profits and governments.
- For example, dive centres experiencing outbreaks of invasive species like the Crown-of-Thorns Seastar at their dive sites can use the forum to gain the resources and expertise to take immediate conservation action.
- The Green Fins Solutions Library will give access to over 100 proven environmental solutions to common daily operational challenges.
- The Action Plan Tracker will enable members to receive an annual sustainability action plan with set goals. An advanced user interface will allow them to track their progress over time.
- Green Fins Hub is expected to scale up reach to a potential 30,000 operators worldwide from about 700 operators across 14 countries today
- The Reef-World Foundation had recently surveyed over 2,400 dive tourists and professionals, of whom 83 per cent said they were looking for further sustainability education on their holiday.
- Some 75 per cent said they would pay more for it, but 85 per cent said they found it difficult to see if an operator was sustainable.
- Coral reefs, home to at least 25 per cent of marine life, are the mecca for marine-related tourism, contributing up to 40 per cent or more of the gross domestic product in some island nations.
- However, they are a most vulnerable ecosystem, especially to climate change with the difference between a global temperature rise of 1.5 or 2 degrees Celsius being existential for reefs.
- Increasing accessibility of best practice, knowledge and citizen science through the Green Fins Hub could be a game changer in ensuring a future for coral reefs and other fragile marine ecosystems.

Sea cucumbers

Why in News

Sea cucumbers most frequently trafficked marine species in India between 2015 and 2021

Important Points

- Sea cucumbers were the most frequently trafficked marine species in India between 2015 and 2021, a new analysis by the Wildlife Conservation Society-India (WCS-India) has shown.
- Tamil Nadu recorded the highest number of marine wildlife seizures during this period, the analysis added. The state was followed by Maharashtra, Lakshadweep and Karnataka.
- The analysis, titled Illegal trade in marine species in India 2015-2021 is based on the assessment of 187 media reports about marine wildlife seizures in India between 2015 and 2021. It recorded illegal marine trade in seven species groups — sea cucumber, coral, seahorse and pipefish, shark and ray, seashell, sea fan and sea turtle.
- India's Wild Life (Protection) Act, 1972 currently protects 10 species of elasmobranchs (including sharks, rays, etc), the giant grouper (*Epinephelus lanceolatus*), all species of seahorses and sea cucumbers, 24 species of molluscs, all scleractinian corals including organ pipe corals, sea fans and sponges.
- It also accords protection to a number of cetaceans (marine mammals), marine turtles, otters, crocodiles and sea snakes.
- The WLP Act provides these species with varying levels of protection across four schedules (I, II, III and IV). Yet, poaching and illegal trade persist, threatening the local population of such species and subsequently the coastal habitats they thrive in, the analysis noted.

Illegal trade and trade routes

- The researchers found that 64,172 kilograms plus 988 individuals (unweighted) of sea cucumbers were seized by enforcement agencies in Tamil Nadu, Lakshadweep Islands and the Andaman Islands.
- Tamil Nadu reported the maximum number of sea cucumber seizures (105 incidents), followed by Lakshadweep (12 incidents) and the Andaman and Nicobar Islands (five incidents).
- At least 11 incidents involving sea cucumber seizures were reported each year, with 2020 recording the most number of incidents (21 incidents), followed by 2016 and 2017 (20 incidents).
- Out of the 122 sea cucumber incidents recorded between 2015 and 2021, 34 incidents either men-

tioned attempts to illicitly export sea cucumbers to neighbouring countries or countries with established markets for trade.

- Sri Lanka (26 incidents), China (six incidents) and Malaysia (two incidents) were recorded as countries that are either transit locations or destinations of the intended trade.
- Consignments meant to be exported to Sri Lanka were documented to be originating from Tamil Nadu in 24 incidents and Lakshadweep in two incidents.
- Sri Lanka was recorded as the most common international location. But it was intended to be a transit location for further transport towards destination countries in southeast Asia.
- Sea fans (20 incidents) and Syngnathidae, ie, sea horses and pipefishes (18 incidents) were the second- and third-most commonly traded groups. Trade in sea fans was not recorded during 2015-2016. Similarly, no seahorse and pipefish incidents were recorded in 2020.
- Out of the 18 recorded seahorse and pipefish incidents, six incidents either mentioned attempts to illicitly export seahorse and pipefish to neighbouring countries or countries with established markets for trade.

International routes with domestic transits recorded were from:

- New Jalpaiguri, West Bengal to Sherathang, Sikkim (by road) and onward to China
- Thondi, Tamil Nadu to Bengaluru, Karnataka (by road) and onward to Pakistan
- Chennai, Tamil Nadu to Mumbai, Maharashtra (transport mode not documented) and onward to China

Consignments recorded to be directly transported internationally were from

- Mumbai, Maharashtra to Kuala Lumpur, Malaysia (by air)
- Thondi, Tamil Nadu to Sri Lanka (transport mode not documented)
- Chennai, Tamil Nadu to Singapore (by air)
- Some 15 incidents were reported from 2017 to 2021 of attempts to trade meat, fins, gill rakers, dried skin and teeth belonging to sharks and rays protected under WLP and the Convention on International Trade in Endangered Species (CITES).
- Shark fins were the most commonly recorded product, reporting a total of 14,188 kg of processed and dried fins across eight incidents.

Tiger reserve

Why in News

Uttar Pradesh plans its 4th tiger reserve in Bundelkhand

Important Points

- The Uttar Pradesh (UP) cabinet approved the notification of the state's fourth tiger reserve in the Ranipur Wildlife Sanctuary (RWS) in Chitrakoot district.
- RWS has no tigers of its own. But pugmarks of the animals are frequently seen there as tigers from nearby Panna frequent it. The two protected areas are just 150 km from each other.
- RWS is an important corridor for the movement of tigers, according to the Status of tigers, co-predators and prey in India report by the National Tiger Conservation Authority (NTCA).
- Camera trapping had been conducted by the forest department in RWS during the last estimation of tigers by the NTCA in 2018. The 12 tiger photo-captures showed that there were three tigers — one male and two females — in Ranipur.
- The UP cabinet approved the notification of Ranipur Tiger Reserve under Section 38(v) of the Wildlife (Protection) Act of 1972. The tiger reserve will span across 529.89 square kilometres (sq km), with a 299.58 sq km buffer zone and 230 sq km core area, which was already notified as the RWS in 1977.
- The Ranipur Tiger Reserve has tropical dry deciduous forests and is home to fauna such as tigers, leopards, sloth bears, spotted deer, sambhar, chinkara and a number of birds and reptiles, the state-ment added.
- The Ranipur Tiger Reserve will be the fourth in UP, after Dudhwa, Pilibhit and Amangarh (buffer of

Corbett Tiger Reserve). It will also be the first in the state's portion of the Bundelkhand region, which it shares with neighbouring Madhya Pradesh.

- A Ranipur Tiger Conservation Foundation will also be established for the protection and conservation of tigers in the region.
- The notification of Ranipur Tiger Reserve has been in the pipeline for long. The UP forest department had sent the proposal to the state government to notify the RWS as a Tiger Reserve back in 2018 itself.
- There are 50 Tiger Reserves in India spread across an area of 72,749 sq km, which is 2.21 per cent of India's geographical area. There were 2,967 tigers in India according to the NTCA's estimation in 2018. Uttar Pradesh had 173 tigers, with 107 in Dudhwa National Park and 65 in Pilibhit.

About NTCA

- The National Tiger Conservation Authority (NTCA) is a statutory body constituted under Wildlife (Protection) Act, 1972.
- NTCA was established in 2005, following a recommendation of the Tiger Task Force constituted by the then Prime Minister of India to reorganised management of Project Tiger and tiger reserves in India.
- NTCA cooperates with bodies such as the Central Bureau of Investigation (CBI), Wildlife Crime Control Bureau (WCCB) and the other departments by issuing alerts for any illegal poaching activities.

Objectives of NTCA

- Providing statutory authority to Project Tiger so that compliance of its directives become legal.
- Fostering accountability of Center-State in management of Tiger Reserves, by providing a basis for MoU with States within our federal structure.
- Providing for an oversight by Parliament.
- Addressing livelihood interests of local people in areas surrounding Tiger Reserves.



TRANSFORM IAS
Transforming Lives with Education

Competitiveness Roadmap for India@100

Why in News

EAC-PM Releases the Competitiveness Roadmap for India@100

Important Points

- The Competitiveness Roadmap for India@100 was released by the Economic Advisory Council to the Prime Minister (EAC-PM).
- The roadmap is a collaborative endeavour between the EAC-PM and The Institute for Competitiveness.
- It envisions setting new guiding principles for the country's growth journey over the following years and guiding different states, ministries and partners in India's growth to develop sector-specific roadmaps for achieving targeted goals.
- The Competitiveness roadmap for India@100 is based on the Competitiveness framework developed by Professor Michael E. Porter.
- The Competitiveness approach puts forth the idea of productivity as a driver of sustained prosperity.
- It emphasizes the context that a nation is able to provide firms to be more productive and for individuals to be able to partake in the value generated through their productivity.
- Based on this approach, the India@100 roadmap guides the way for India to become a high-income country by 2047 through sector-specific and region-specific policies based on the '4 S' principles.
- The roadmap sets out to give new guiding principles that are based on clearly defined overall goals and the articulation of a new development approach embedded in integrating social and economic agendas.
- The '4 S' guiding principles redefine our approach to attaining prosperity by stressing the need for prosperity growth to be matched by social progress, to be shared across all regions within India, to be environmentally sustainable, and to be solid in the face of external shocks.
- By capturing these four important aspects, the '4 S' guiding principles pave the way for resilient and holistic development.
- The competitiveness approach must serve as the cornerstone of India's economic and social policy for us to be able to sustain long-term economic growth.
- The recommendations outlined in the roadmap factor in India's unique advantages and are based on a new set of guiding principles, policy goals, and an implementation architecture".
- It offers a thorough diagnostic assessment of India's current competitiveness level, the primary challenges faced, and opportunities for growth.
- Furthermore, setting out the pathway to becoming a high-income country, the roadmap suggests essential areas of action, including improving labour productivity and enhancing labour mobilization, boosting the creation of competitive job opportunities, and improving policy implementation through greater coordination across different ministries.
- The Competitiveness Roadmap for India@100 provides the basis for a renewed approach to India's growth and development strategy.
- Moving ahead, the focus would be on developing KPIs and roadmaps for different industries, ministries, and states of the country to shape the journey towards reaching the country's ambitions by its centennial year.
- The change in approach to development in different sectors and states will not only shape policy actions today but also have an impact on the design and implementation of future policies.

5th largest economy

Why in News

India pips UK to become world's 5th largest economy

Important News

- India surpassed the United Kingdom to become the 5th largest economy in the World.
- According to Bloomberg Report, India outpaced England during the preceding three months of 2021.
- The size of the Indian economy in 'nominal' cash terms in the quarter ending in March was \$854.7 billion,

while the UK stood at \$816 million, as per a Bloomberg study.

- The International Monetary Fund (IMF) announced that India had surged past the United Kingdom to become the fifth largest economy in the world.
- The latest change in rankings is based on quarterly gross domestic product (GDP) numbers in current dollars for the period ending December 2021.
- India increased its lead over the UK in the quarter ending March, IMF data showed.
- On an adjusted basis and using the dollar exchange rate on the last day of the relevant quarter, the size of the Indian economy in 'nominal' cash terms in the quarter through March was \$854.7 billion. On the same basis, the U.K. was \$816 billion.
- India has a population 20 times that of the U.K. and so its GDP per capita is lower.
- India's GDP expanded 13.5% in the April-June quarter, the quickest pace in a year, to retain the world's fastest growing economy tag but rising interest costs and the looming threat of a recession in major world economies could slow the momentum in the coming quarters.
- Gross domestic product (GDP) growth of 13.5% year-on-year compares to a 20.1% expansion a year back and 4.09% growth in the previous three months to March, according to official data released earlier this week.
- The growth, though lower than the Reserve Bank of India (RBI) estimate of 16.2%, was fuelled by consumption and signalled a revival of domestic demand, particularly in the services sector.
- Pent-up demand is driving consumption as consumers, after two years of pandemic restrictions, are stepping out and spending.
- The services sector has seen a strong bounce back that will get a boost from the festival season.
- But the slowing growth of the manufacturing sector at 4.8% is an area of worry. Also, imports being higher than exports is a matter of concern.
- Additionally, an uneven monsoon is likely to weigh upon agriculture growth and rural demand.
- The GDP print will, however, allow the RBI to focus on controlling inflation, which has stayed above the comfort zone of 6% for seven straight months.
- The central bank has raised the benchmark policy rate by 140 basis points in three installments since May and has vowed to do more to bring inflation under control.
- Besides tighter monetary conditions, Asia's third-largest economy faces headwinds from higher energy and commodity prices that are likely to weigh on consumer demand and companies' investment plans.
- The GDP growth in the first quarter of the current fiscal was higher than China's 0.4% expansion in April-June.

Top Economies in the World

1. The United States
2. China
3. Japan
4. Germany
5. India
6. The United Kingdom
7. France
8. Italy.
9. Canada
10. South Korea

Focus:

- Nominal GDP (means including inflation) Vs Real GDP (without counting for inflation)
- Current prices (are those indicated at a given moment in time, and said to be in nominal value) Vs Constant prices are in real value, i.e. corrected for changes in prices in relation to a baseline or reference datum.

RBI guidelines for digital lending

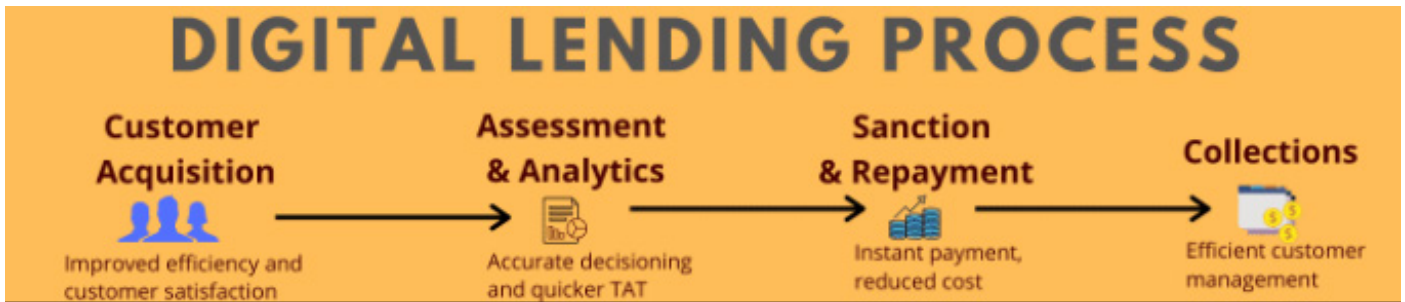
Why in News

RBI has tightened the norms for digital lending seeing a number of cases of fraud.

Important Points

- The Reserve Bank of India (RBI) said that regulated entities engaged in credit delivery through digital lending will have time till November 30 to comply with the lending norms for existing digital loans.

- However, for new and existing customers availing fresh loans, these norms will be applicable immediately.
- The RBI also pointed out that obligations of the regulated entities will not diminish even if they enter into out-sourcing arrangements with lending service providers (LSPs)/digital lending apps (DLAs).
- And, it is the regulated entities' duty to ensure that these entities follow the guidelines prescribed by the regulator.
- RBI has come out with detailed guidelines on recommendations of the working group that were accepted for immediate implementation last month.
- The guidelines are applicable to all kinds of digital loans extended by commercial banks, non-banking finance companies (NBFCs), and primary, state, and district-level central co-operative banks.
- Among the recommendations accepted were that all loan disbursements and repayments are required to be executed only between the bank accounts of the borrower and the regulated entities. It should be without any pass through/ pool account of the LSP or any third party.



Tightening The Noose

- The RBI has come out with guidelines on the recommendations of the working group on digital lending
- Guidelines are applicable to commercial banks, NBFCs, urban co-operative banks, and state co-operative banks
- Loan disbursements and repayments are required to be executed only between the bank accounts of the borrower and the RE
- Under no circumstance, is a disbursement to be made to a third-party account, including the accounts of LSPs and their digital lending apps
- The central bank has clarified that disbursements have to always be made into the bank account of the borrower.
- The exceptions are for disbursements covered exclusively under statutory or regulatory mandate, flow of money between regulated entities for co-lending, and disbursements for specific end-use, provided the loan is disbursed directly into the bank account of the end-beneficiary.
- The RBI has categorically stated that in no case, disbursement is to be made to a third-party account, including the accounts of LSPs and their DLAs.
- Regulated entities have to ensure that fees that are required to be paid to LSPs are paid directly by them. They should not be charged by LSP to the borrower directly. The central bank has also clarified that penal interest on borrowers should be based on the outstanding amount of the loan.
- A cooling off period is where a borrower gets an option to exit a digital loan by paying the principal and the proportionate APR without any penalty during this period.

Loan apps

Why in News

FM tasks RBI to 'whitelist' legal loan apps to protect borrowers

Important Points

- To curb the menace of illegal loan apps, the Reserve Bank of India (RBI) has been asked to prepare a 'Whitelist' of legal loan apps and the Ministry of Electronics and Information Technology (MEITY) has been tasked with ensuring only such applications are available on app stores.
- All ministries and agencies have been asked to 'take all possible actions to prevent operations of such Illegal Loan Apps', following a meeting chaired by Finance Minister Nirmala Sitharaman with top officials from the RBI, MEITY and the ministries of Finance and Corporate Affairs.
- Government expressed concern on such apps offering loans or micro credits, especially to vulnerable & low-income group people at exorbitantly high interest rates and resorting to blackmail and criminal intimidation to recover such loans.
- Finance Ministry also flagged the possibility of money laundering, tax evasions, breach of privacy and data, and misuse of unregulated payment aggregators, shell companies, defunct NBFCs for perpetrating such actions.

- The central bank has also been entrusted with monitoring 'mule or rented' accounts that may be used for money laundering and to review and cancel dormant non-banking finance companies (NBFCs) to avoid their misuse by such app operators.
- The RBI will ensure that registration of payment aggregators be completed within a timeframe and no un-registered payment aggregator be allowed to function after that.
- Steps should be taken to increase cyber awareness for customers, bank employees, law enforcement agencies and other stakeholders.
- The Ministry of Finance said it will monitor the actionable points for compliance on a regular basis.
- As per RBI, "Sachet", a portal established by RBI against unregistered entities, has received approximately 2,562 complaints against digital lending apps between the start of January 2020 to end of March 2021.
- Further, 27 unlawful loan lending apps were blocked following the due process specified in the Information Technology (Procedure and Safeguards for Blocking for Access of Information for Public) Rules, 2009, notified under section 69A of Information Technology Act, 2000, Ministry of Electronics and Information Technology.
- Most complaints were received from Maharashtra (572), followed by Karnataka (394), Delhi (352), Haryana (314), Telangana (185), Andhra Pradesh (144), Uttar Pradesh (142), West Bengal (138), Tamil Nadu (57), Gujarat (56).
- Despite a crackdown in countries like China against such apps, India has the highest number of them.
- Following red flags raised by the government, tech giants like Google, whose Android platform is most popular in India, carried out an elaborate review exercise on apps available on its Play Store.
- A lot of lending platforms are operated by offshore entities beyond Indian legal jurisdiction.



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Changes in IBC

Why in News

The Insolvency and Bankruptcy Board of India (IBBI) has amended the Insolvency and Bankruptcy Code (IBC) with the aim to hasten the changes and maximize recovery.

Important Points

- Multiple amendments and clarifications to the Insolvency and Bankruptcy Code by the Insolvency and Bankruptcy Board of
- India (IBBI) will help creditors fetch better value for distressed assets and lift sagging recovery rates.
- In separate notifications, IBBI allowed creditors to sell part assets in case they get more value.
- More importantly, the regulator also announced a performance-based pay structure for resolution professionals (RPs). Both moves will have far-reaching changes to recoveries.
- Allowing RPs an incentive based on recovery value aligns with the objectives of all stakeholders.
- Creditors were so far averse to working with a performance-based fee plan and that has led to a decline in the quality of the resolution and as result the recovery value.

Enhancing Incentives

IBBI's notification has announced a performance-based pay structure for resolution professionals effective October 1

SOME OF THE FEATURES ARE:

A minimum fixed fee for RPs
They can now earn ₹1 lakh to ₹5 lakh a month depending on size of claims settled

RP can earn 1% of realisable value if resolution plan submitted to NCLT within 165 days

The incentive will be nil on submissions beyond 330 days

RP will also get 1% of difference between realised value and liquidation value as incentive value maximisation



- Incentives will make resolution professionals strive to optimize the value of the corporate debtor.
- In a notification, IBBI has for the first time set a minimum fixed fee for RPs. Depending on the size of claims admitted, RPs can now earn between Rs1 lakh and Rs5 lakh per month. More importantly, incentives have been built in for both timely resolution and value maximisation.
- An RP is now entitled to 1% of the realisable value if the resolution plan is submitted to the National Company Law Tribunal (NCLT) in less than 165 days. Conversely, he gets nothing if the plan is submitted after more than 330 days.
- The RP is also entitled to 1% of the difference between the realised value and the liquidation value as an incentive for value maximisation. This change is effective from October 1.
- IBBI has also allowed creditors to sell assets separately in cases where no resolution plan has been received for the corporate debtor as a whole, thereby maximising value.

About IBC

- It was introduced in 2016 to tackle bad loans and solve insolvencies.
- In accounting, insolvency is the state of being unable to pay the debts, of a person or company, at maturity; those in a state of insolvency are said to be insolvent.

Insolvency and Bankruptcy Code (Amendment) bill, 2021: It proposed the Pre-packaged Insolvency Resolution Process (PIRP), also called 'pre-packs' as an insolvency resolution mechanism for Micro, Small and Medium Enterprises (MSMEs).

National Logistics Policy

Why in News

PM Narendra Modi launches National Logistics Policy

Important Points

- The National Logistics Policy, unveiled by Prime Minister Narendra Modi, will further help in improving ease of doing business and significantly reducing transportation cost, according to the Indian industry.
- The policy seeks to address challenges facing the transport sector and bring down the logistics cost of businesses from 13-14 per cent of the GDP to a single digit in the coming years.
- Reduced logistics cost and increased logistic efficiencies will energise the economy across sectors in multiple ways and take India many steps closer to emerging as a global manufacturing powerhouse.
- Besides improving ease of doing business, it would help in ensuring speedier and seamless movement of cargo and people across modes of transport -- water, air, roads, railways.

Full Package

NLP proposed in Budget 2020, unveiled by PM on Saturday

Looks to ensure first-, last-mile connectivity at a faster pace

Framework to set up multi-modal logistics parks in key markets

Inter-ministerial collaboration will push ease of doing business

Targeting integrated, tech-enabled approach to logistics ops

This will boost efficiency, help attract investment



BCCL

- The policy will substantially reduce transaction costs across the supply chain. Enabled by different technologies, the policy focuses on unified measures across different logistics modes, including roads, rail, ports, airports and warehousing, that will give a decisive edge to ease of doing business in India.
- This is a holistic effort to increase the efficiencies of all aspects of the logistics value chain.
- Over the past five fiscals, the government has invested close to Rs 15 lakh crore in augmenting hard infrastructure such as roads, rail, ports and airports, he said.
- The policy represents a set of continuing initiatives aimed at making India's logistics sector more cost competitive, environment friendly, formalised, transparent, with reduced and predictable delivery timelines.
- Some of the key pillars of the policy include ensuring quality logistics infrastructure, with special emphasis on first- and last-mile connectivity; and use of digital technologies and analytics through initiatives like the Unified Logistics Interface Platform to match demand and supply.
- The policy is expected to facilitate a modal shift in logistics from the current over dependence on roads (over 60 per cent share currently as against 25 per cent globally) to railways (30 per cent currently) and waterways (only 5 per cent currently), thereby reducing average logistics costs as well as carbon footprint.
- It is also expected to lead to a significant improvement in India's ranking in global studies like the World Bank's Logistics Performance Index, where India was ranked 47 out of 160 countries in 2018.
- It is an extremely vital step taken by the government that will boost the growth of the automobile sector as the policy focuses on building superior infrastructure like 35 Multi-Modal Logistics Hubs, which will promote seamless transportation of goods.
- It is expected that this policy will reduce the transit time and logistics cost for manufacturers and improve the competitiveness of Indian goods in international markets, thereby helping India's exports
- The development of an integrated and efficient logistics ecosystem is a crucial enabler for India to become a USD 5 trillion economy and improve trade competitiveness.
- As India looks to modernize infrastructure and supply chains, it's evident that technology is the key to unifying all involved stakeholders and to help manage complexity better.
- The National Logistics Policy (NLP) comes as a big boost for the sector, as it aims to promote seamless movement of goods across India and potentially could lead to a reduction in the cost of logistics and accelerate GDP growth.
- The enhanced focus of the policy on enhancing human capital and operating standards are welcome initiatives to increase formalisation of the sector.
- The policy will further have a positive impact on the nation's supply chain and help to augment warehousing capacity, and take products closer to the consumption points.
- The launch of NLP will bring transparency through digital integration in addition to boosting speed and efficiency. It will enable fast-paced logistics infrastructure development, better coordination among multiple stakeholders, simplify processes and documentation and boost last-mile connectivity.
- With an ambitious goal to bring down logistics costs by up to 25 per cent, this could lead to a paradigm shift in the logistics industry in India and will boost India's export competitiveness in the global market.
- The Policy is a crucial step for efficient supply-side management and reducing logistic costs to global standards of about 10 per cent.
- It will provide the much-needed fillip to export growth allowing Indian manufacturers to expand footprints globally. The Gatishakti Vishwavidyalaya will bolster employment opportunities, laying emphasis on skill enhancement across the logistics value chain.
- With its focus on connecting the hinterlands, this in turn, will ensure return loads and lower dead miles as supply and demand come together in a transparent marketplace across India.

Growth forecast for India

Why in News

Fitch lowers India's FY 2023 GDP growth forecast to 7% from 7.8%.

Important Points

- Fitch Ratings slashed India's economic growth (GDP) forecast for the current fiscal to 7 per cent from the previous estimate of 7.8 per cent.
- The global ratings agency expects the economy to grow 7 per cent in 2022-23, with the next financial year also slowing to 6.7 per cent from the earlier estimate of 7.4 per cent.
- The (Indian) economy recovered in 2Q22 with growth of 13.5 per cent year-on-year, but this was below expectation of an increase of 18.5 per cent.
- Seasonally adjusted estimates show a 3.3 per cent quarter-on-quarter decline in 2Q22 though this seems to be at odds with high-frequency indicators.
- It expects the Indian economic growth to slow down given the global economic backdrop, elevated inflation

and tighter monetary policy.

- In its report, Fitch noted that the European gas crisis, high inflation and a sharp acceleration in the pace of global monetary policy tightening are taking a heavy toll on economic prospects.
- It has cut growth forecasts sharply and widely since the June Global Economic Outlook (GEO).
- Fitch now expects the world GDP to grow by 2.4 per cent in 2022, down 0.5 per cent from previous estimates.
- In 2023, the ratings agency sees world GDP growth at just 1.7 per cent.
- The Eurozone and UK are expected to enter recession later in 2022 and the US is expected to suffer a mild recession in mid-2023.
- Earlier, Moody's Investors Service also sharply cut India's GDP growth forecast for 2022 to 7.7 per cent.
- It said that rising interest rates, uneven monsoon, and slowing global growth will affect the economic growth on a sequential basis.
- Moody had projected India's GDP to rise 8.8 per cent in 2022. The credit rating agency also trimmed the country's GDP forecast for the next year 2023 to 5.2 per cent from 5.4 per cent projected earlier.
- The economy expanded at 8.3 per cent in the previous year 2021, after contracting 6.7 per cent in 2020 when the pandemic had hit the country.
- In its update to Global Macro Outlook 2022-23, Moody's said that the Reserve Bank of India (RBI) may remain hawkish this year and maintain a reasonably tight policy stance in 2023 to contain domestic inflationary pressures.
- Earlier Citigroup Inc also sharply cut its growth projection to 6.7 per cent for the fiscal year to March 2023, from 8 per cent project previously, while Goldman Sachs Group revised it downwards to 7 per cent from 7.2 per cent earlier, after data showed India's gross domestic product grew less than expected in the last quarter.

What is a Rating Agency?

- Rating agencies assess the creditworthiness or potential of equity, debt or country.
- Their reports are read by investors to make an informed decision on whether or not to invest in a particular country or companies in that geography.
- Lowered rating of a country can potentially cause panic selling or offloading of investment by a foreign investor.



TRANSFORM IAS
Transforming Lives with Education

Chapter- 5

SCIENCE AND TECHNOLOGY

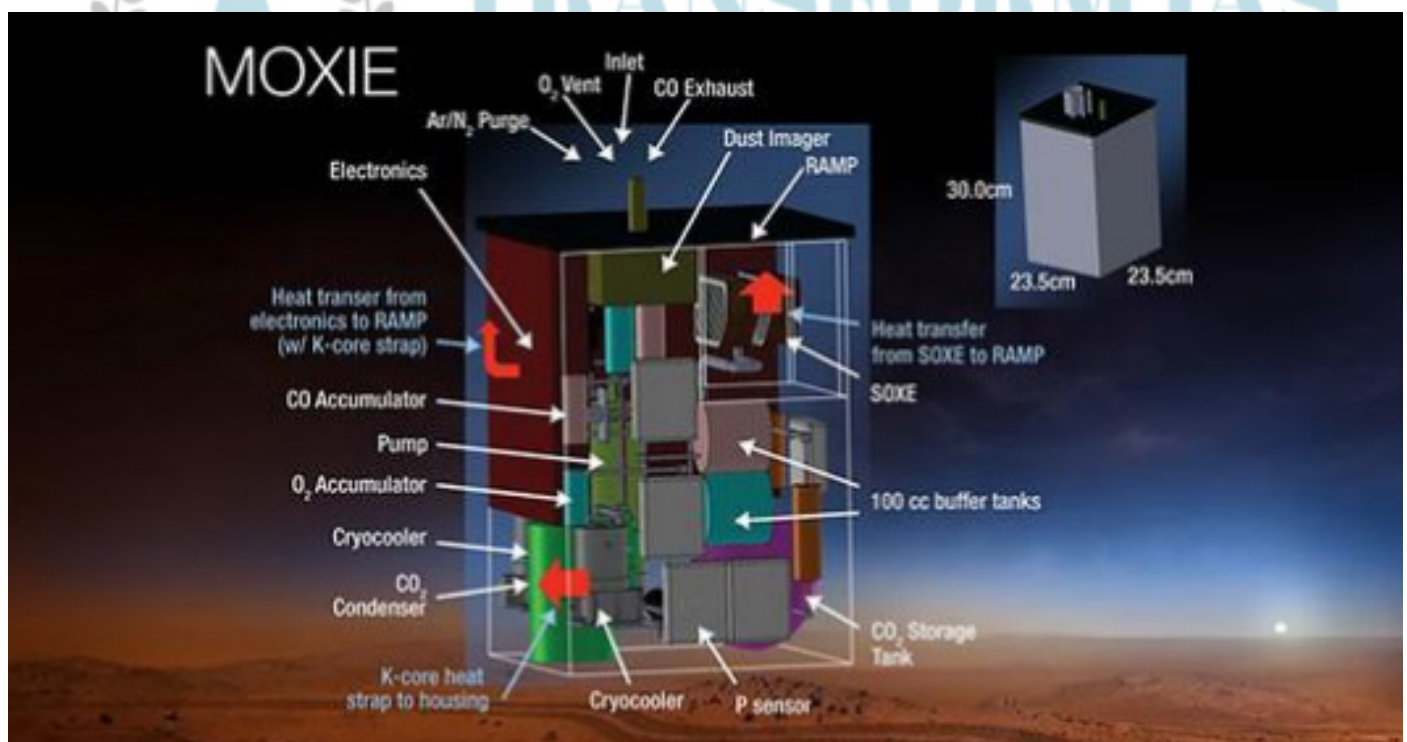
MOXIE

Why in News

Mars Oxygen In-Situ Resource Utilization Experiment (MOXIE) has produced the 1st instance of the utilisation of resources in a planet's atmosphere to meet human needs.

Important Points

- A small box sent with the Perseverance rover of the United States National Aeronautics and Space Administration has produced oxygen in Mars with components from the planet's atmosphere.
- The Mars Oxygen In-Situ Resource Utilization Experiment (MOXIE) by the Massachusetts Institute of Technology (MIT) works like a tree, splitting carbon dioxide absorbed from the atmosphere to produce pure oxygen.
- The first successful conversion was two months after the rover landed on Mars in April 2021. Since then, seven rounds of experiments were successfully conducted with Moxie in various times of the day and year, according to the report.
- This is the first time material needed for human missions on Mars was generated with resources from the planet and not those carried from Earth, said MOXIE deputy principal investigator Jeffrey Hoffman, a professor of the practice in MIT's Department of Aeronautics and Astronautics.
- The instrument produced 6 grams of oxygen per hour, similar to a moderate-sized tree. The project can be scaled up ahead of human missions to continuously produce oxygen "at the rate of several hundred trees".



- Inside Moxie, Martian air is first filtered in and pressurised. It is then sent through the Solid Oxide Electrolyzer (SOXE), an instrument developed and built by OxEon Energy, that electrochemically splits the carbon dioxide-rich air into oxygen ions and carbon monoxide.
- The oxygen ions are isolated and recombined to form breathable, molecular oxygen (O₂), they explained. Finally, the gas is measured and tested for purity before being released into the atmosphere.
- Several aspects of seamless oxygen production still remain to be seen, according to the authors. The team is yet to test the machine at dawn and dusk as well as in certain times of the Martian year.
- The atmosphere on the Red Planet varies greatly through the day and in different seasons. The density of the air can vary by a factor of two through the year, and the temperature can vary by 100 degrees.

Cervavac

Why in News

India's first indigenously developed vaccine for cervical cancer.

Important Points

- Union Ministry of Science and Technology announced the scientific completion of Cervavac, India's first indigenously developed quadrivalent human papillomavirus (qHPV) vaccine for the prevention of cervical cancer.
- Despite being largely preventable, cervical cancer is the fourth most common cancer among women globally, according to the WHO. In 2018, an estimated 570,00 women were diagnosed with the disease and it accounted for 311,000 deaths across the world.
- As per indications from Serum Institute of India the cost would approximate between Rs 200 to 400.
- How common is cervical cancer in India?
- India accounts for about a fifth of the global burden of cervical cancer, with 1.23 lakh cases and around 67,000 deaths per year
- Almost all cervical cancer cases are linked to certain strains of human papillomavirus (HPV), a common virus that is transmitted through sexual contact.
- While the body's immune system usually gets rid of the HPV infection naturally within two years, in a small percentage of people the virus can linger over time and turn some normal cells into abnormal cells and then cancer, according to the Centers for Disease Control and Prevention (CDC).
- Screening and vaccination are two powerful tools that are available for preventing cervical cancer. Still, there is little awareness among women about the prevention of this cancer and less than 10% of Indian women get screened.
- All women aged 30-49 must get screened for cervical cancer even if they have no symptoms and get their adolescent daughters vaccinated with the HPV vaccine.

Who developed the new qHPV vaccine?

- Cervavac was developed by the Pune-based Serum Institute of India in coordination with the Government of India's Department of Biotechnology (DBT).

How effective is the new vaccine?

- HPV vaccines are given in two doses and data has shown that the antibodies that develop after both are administered can last up to six or seven years.

What are the challenges?

- The biggest task will be in allocating adequate resources and manpower for vaccinating the massive demographic of adolescent girls aged between 9 and 15, to ensure that they are protected from HPV early on.

What next?

- Experts suggest that school-based vaccination programmes will work effectively.

BPaL

Why in News

Short anti-Tuberculosis Treatment 'BPaL' has shown favourable outcomes for 84 to 94% of TB patients and has therefore been given global approval.

Important Points

- A short tuberculosis treatment regimen of six months called BPaL as against the usual 18-month protocols has won the scientific vote with trials in multiple countries showing it had "favourable outcomes" in 84% to 94% of the sickest patients.
- The "bedaquiline-pretomanid-linezolid" regimen, abbreviated as the BPaL regimen, has been reported to have around 90% efficacy against highly drug-resistant tuberculosis, but the incidence of adverse events with 1,200 milligrams of linezolid daily has been high.
- The new trial was conducted to find the appropriate dose of linezolid, one of the three medicines in the regimen, and the duration of treatment with this agent to minimise toxic effects while maintaining efficacy against highly drug-resistant tuberculosis.

- The study concluded that the overall risk-benefit ratio favoured the group that received the three-drug regimen with linezolid at a dose of 600 mg for 26 weeks, with a lower incidence of adverse events reported and fewer linezolid dose modifications.

What is BPAL?

- A new drug for TB is finally in the process of a global roll-out, including in India. Developed by a non-profit organisation, TB Alliance, pretomanid is the newest anti-TB drug, prescribed as part of the BPAL regimen, which includes bedaquiline and linezolid.
- Medical practitioners believe that this new drug in the BPAL combination will cut short the treatment duration by half (and more), and reduce the amount of medication an MDR-TB patient must take during treatment.
- From a treatment duration range of 18 to 24 months, BPAL is likely to bring down the time to around 6 months.
- Furthermore, the older “all oral drug regimen” included nearly 14 different anti-TB drugs for a patient to take every day.
- With BPAL, it is likely to take just three daily tablets. A shorter regimen, which is all oral and requires fewer doses per day, makes it easier for a patient to adhere to and complete treatment.

Why is BPAL important for India?

- The introduction of the new drug as part of the BPAL regimen comes at a time when data from the India TB Report has revealed that the situation for drug-resistant forms of TB or multi-drug resistant TB needs urgent mitigation.
- According to the Global TB Report 2021, the mortality rate due to all forms of TB between 2019 and 2020 increased by 11% in India. In absolute numbers, the total number of estimated deaths from all forms of TB, excluding HIV, for 2020 was 4.93 lakhs (4.53-5.36 lakhs) in the country, 13% higher than the 2019 estimate.
- India is also one of the top high-burden countries for TB, HIV-associated TB, and MDR/RR-TB, as estimated by the WHO for 2021–2025.
- Recognising the disruptive potential of BPAL, the WHO has also shared rapid communication for TB treatment to allow for the programmatic implementation of BPAL.

► Pulmonary TB (PTB) and extrapulmonary TB (EPTB) are two types, former being the most common

► As she didn't have common symptoms of TB, it was difficult for the family to believe that the TB had reached up to spine and brain

► EPTB refers to TB involving organs other than the lungs

► Eventually, spine reconstruction and complex surgery had to be done to save the patient

► The patient in this case must have suffered from PTB, but neglected it

After MRI, I diagnosed her with infection in spine due to tuberculosis and asked her to get the surgery done. However, the stigma about TB is still there in the society and the family members of the patient were not ready to accept my diagnosis

We rarely see this type of extensive spread of TB in spine, brain, pelvis and chest. The critical surgery helped the patient recover fast

DR PRIYESH DHOKE
| SPINE SURGEON

DR AMIT BHATTI
| NEUROLOGIST

About TB

- Tuberculosis (TB) is caused by a bacterium called Mycobacterium tuberculosis.
- The bacteria usually attack the lungs, but TB bacteria can attack any part of the body such as the kidney, spine, and brain. Not everyone infected with TB bacteria becomes sick.
- As a result, two TB-related conditions exist: latent TB infection (LTBI) and TB disease. If not treated properly, TB disease can be fatal.

DART

Why in News

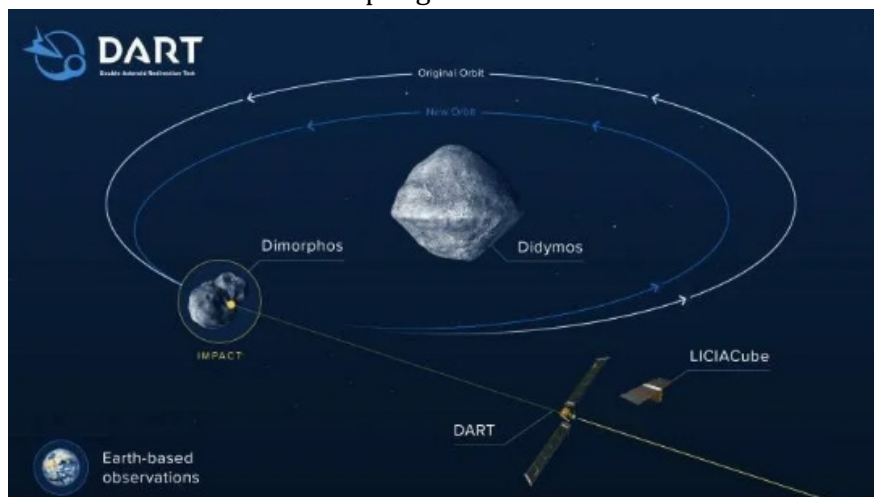
In the first-of-its-kind, save-the-world experiment, NASA's Double Asteroid Redirection Test (DART) spacecraft will crash into a small moonlet called Dimorphos.

Important Points

- In the first-of-its kind, save-the-world experiment, NASA is about to clobber a small, harmless asteroid millions of miles away.
- A spacecraft named Dart will zero in on the asteroid Monday, intent on slamming it head-on at 14,000 mph (22,500 kph).
- The impact should be just enough to nudge the asteroid into a slightly tighter orbit around its companion space rock — demonstrating that if a killer asteroid ever heads our way, we'd stand a fighting chance of diverting it.
- Cameras and telescopes will watch the crash, but it will take months to find out if it actually changed the orbit. The \$325 million planetary defense test began with Dart's launch last fall.
- The asteroid with the bull's-eye on it is Dimorphos, about 7 million miles (9.6 million kilometers) from Earth.
- It is actually the puny sidekick of a 2,500-foot (780-meter) asteroid named Didymos, Greek for twin.
- Discovered in 1996, Didymos is spinning so fast that scientists believe it flung off material that eventually formed a moonlet. Dimorphos — roughly 525 feet (160 meters) across — orbits its parent body at a distance of less than a mile (1.2 kilometers).
- NASA insists there's a zero chance either asteroid will threaten Earth — now or in the future. That's why the pair was picked.
- Johns Hopkins took a minimalist approach in developing Dart — short for Double Asteroid Redirection Test — given that it's essentially a battering ram and faces sure destruction.
- It has a single instrument: a camera used for navigating, targeting and chronicling the final action. Believed to be essentially a rubble pile, Dimorphos will emerge as a point of light an hour before impact, looming larger and larger in the camera images beamed back to Earth.
- Scientists are confident Dart won't smash into the larger Didymos by mistake. The spacecraft's navigation is designed to distinguish between the two asteroids and, in the final 50 minutes, target the smaller one.
- The size of a small vending machine at 1,260 pounds (570 kilograms), the spacecraft will slam into roughly 11 billion pounds (5 billion kilograms) of asteroid.
- Unless Dart misses — NASA puts the odds of that happening at less than 10% — it will be the end of the road for Dart. If it goes screaming past both space rocks, it will encounter them again in a couple years for Take 2.

Other missions to asteroids:

- OSIRIS-Rex (NASA) is on its way back to Earth to deliver samples it collected from asteroid Bennu in 2020.
- NASA's Lucy spacecraft is headed to asteroids near Jupiter.
- In 2026, NASA will launch a census-taking telescope to identify hard-to-find asteroids that could pose risks.
- NASA's Psyche spacecraft is a planned mission to a metal-rich asteroid between Mars and Jupiter.
- Hayabusa2 (Japan) is an asteroid sample-return mission.
- China to launch Tianwen 2 asteroid-sampling mission in 2025.



5G

Why in News

DGCA raises concern over 5G rollout, writes to telecom department

Important Points

- Major airlines across the world like Emirates, Japan Airlines, and All Nippon Airways have cancelled or reshuffled flights to the US, citing concerns over the rollout of C-band 5G mobile service in the country.
- Air India had also cancelled at least 8 flights “due to deployment of 5G communications in the US”, but has since resumed operations, after getting clearance from US authorities.

What are Airlines Concerned About?

- Airlines are worried that the C-band 5G will interfere with aircraft safety systems. Radio altimeters, in particular, use high frequency radio waves (between 4.2 - 4.4 gigahertz) to measure a plane’s distance from the ground.
- The C-band 5G spectrum in the US gives telecom carriers access to the 3.9–3.98 GHz band, which is very close to the frequencies at which altimeters operate, and can potentially cause interference.
- Radio altimeters are more accurate than barometric altimeters and are used where aircraft height needs to be precisely measured, especially during low altitude and low visibility operations.
- For telecom providers a higher frequency band means faster service. They argue that 5G has already been deployed other countries and hasn’t caused any trouble for aircrafts.
- Verizon and AT&T have also agreed to create buffer zones around 50 US airports for six months to minimize potential interference.
- They have also expressed frustration at the government for not “responsibly” utilising the time they had to plan for the rollout.

Which Aircraft Models are Affected?

- The issue initially appeared to impact the Boeing 777, a long-range and wide-body aircraft that is widely used for international flights. This is why Air India and other major airlines, which use this aircraft on its US routes, had temporarily cancelled certain flights.
- However, Boeing and the FAA have now given the aircraft clearance to operate in the US, even in low visibility conditions.

Other aircraft models with approved altimeters are:

- Boeing 717, 737, 747, 757, 767
- MD-10/-11
- Airbus A300, A310, A319, A320, A321, A330, A340, A350, A380

The FAA estimates that 62% of the US commercial fleet will operate without 5G interference. Aircraft not mentioned in this list are yet to be cleared by the authority.

Will This Affect India, Too?

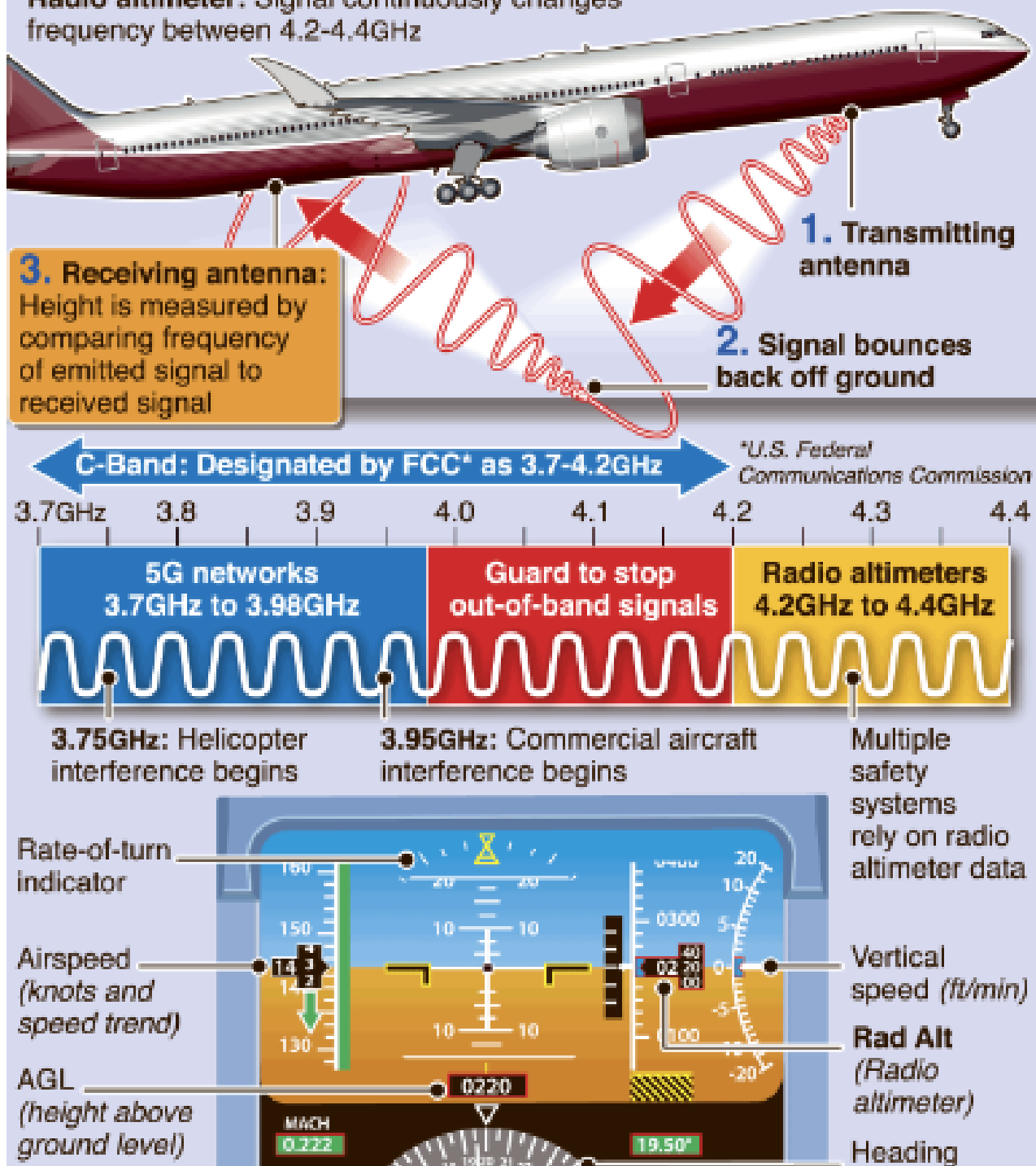
- The Federation of Indian Pilots (FIP), with a membership of 6,000 pilots, expressed concern over possible interference of 5G signals with aircraft equipment.
- In a letter to Civil Aviation Ministry, the DGCA and the Telecom Regulatory Authority of India (TRAI) asked to work together to ensure the safe implementation of 5G.



Airlines warn of 5G threat

Airlines are warning that new U.S. C-Band 5G services could potentially interfere with aircraft instruments such as radio altimeters, which display the height between the runway and wheels when landing

Radio altimeter: Signal continuously changes frequency between 4.2-4.4GHz



eSIMs

Why in News

SIMs have come again in the news as the new Apple iPhone 14 will be completely dependent on eSIMs in the US.

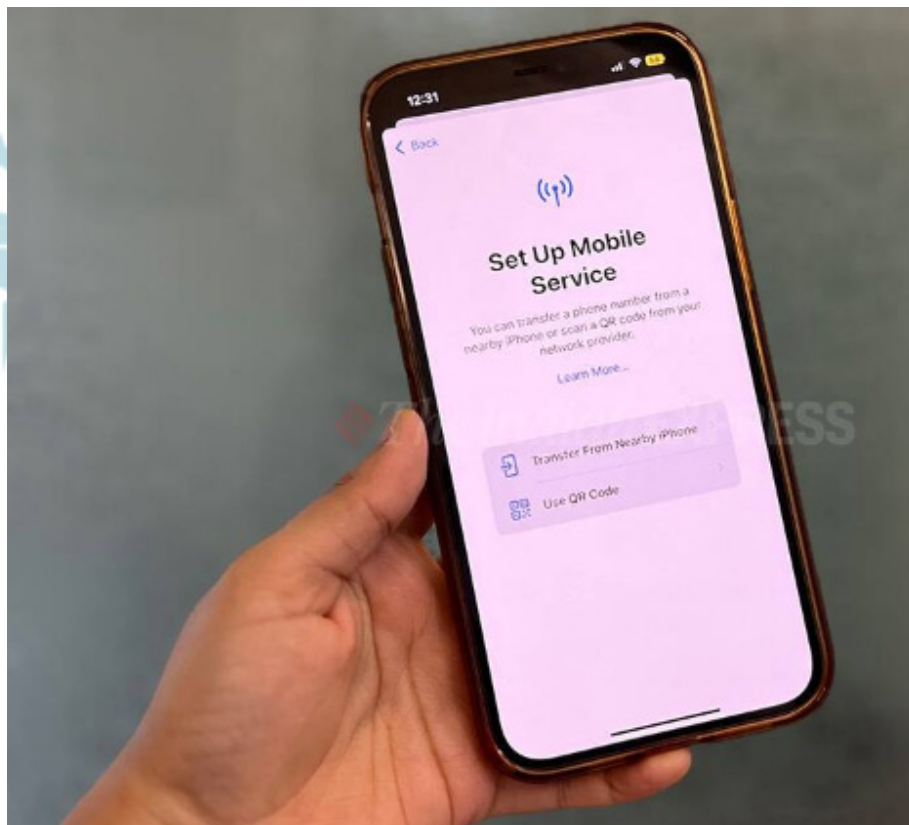
Important Points

- With the iPhone 14 series, Apple has made a big change to the devices being sold in the US.

- These come without a physical SIM slot and a user will have to rely on an eSIM in order to access mobile networks.
- eSIMs are not something new, they have been around for a while.
- Nor is Apple the first company to remove the physical SIM slot from its phones.
- Samsung Galaxy Z Fold, and Z Flip series do not have a physical SIM slot, including the units sold in India and require only an eSIM in order to work.
- Apple has supported eSIMs for a while (since iPhone XS and above), though dual eSIM support started with the iPhone 12 series.
- Till now users in the US had the option of using a regular SIM and an eSIM, but now they will have to stick to an eSIM.

What is an eSIM?

- If the name doesn't already give it away, an eSIM is an embedded SIM, essentially the same hardware of a regular SIM card chip, but now a permanently embedded part of the motherboard of a watch or smartphone.
- Just like a traditional SIM card, an eSIM also consists of some components, which are now a part of your phone's internal organs. They also function the same way, acting as a unique identifier for telecom operators and other consumers to reach your exact smartphone when they make a call or send a text.



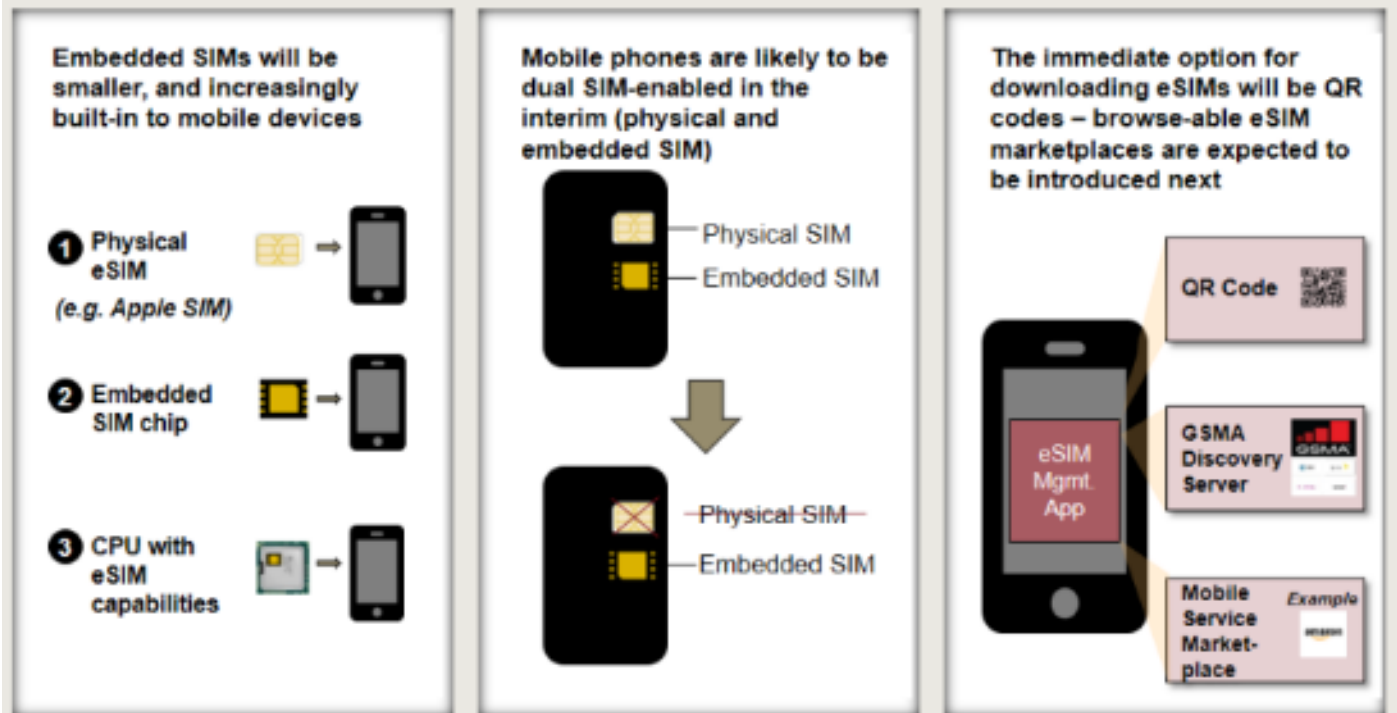
Apple eSIM: How does it work?

- Apple notes that an “eSIM is an industry-standard digital SIM supported by carriers”.
- It also goes on to add that eSIM will offer more benefits, especially when travelling abroad because if your iPhone is stolen.
- That's because the thieves cannot remove the SIM and access that, especially if your iPhone is locked.
- Apple also notes on another page, that for models bought in the US, the iPhone activates with an eSIM.

Apple eSIM: How many can you store on iPhone 14 series?

- Customers can store eight or more eSIMs on an iPhone 14 series. But a user can have two eSIMs active on supported iPhone models at the same time. So you can store multiple eSIMs but only use two of these at any given time.
- Users will be able to swap between active eSIMs by changing selections in Settings. This will be useful when travelling abroad.

Embedded SIM (eSIM) technology: Consumer mobile devices



Apple eSIM: You bought the iPhone 14 in the US, but plan to use it in India. Will this eSIM be an issue?

- If you purchased an unlocked iPhone 14 model in the United States, it will work fine in India.
- But you will need to put a request for an eSIM at the time of setting up the iPhone and make sure you have the QR code ready to scan. The iPhone 14 series from the US requires an eSIM for activation.
- In India, Jio, Airtel and Vi all support eSIM so you are covered. You will need to send a message to the carrier asking them to activate eSIM and they usually send a code which has to be scanned via the new device on which you intend to use the eSIM. Once done, the eSIM should work

Advantages of eSIMs

- **Convenience:** The ability to store multiple SIM profiles in your eSIM also means you can switch between profiles easily, without the need of activating a SIM repeatedly or physically switching cards repeatedly.
- **Security:** An eSIM prevents pulling out sim, as there is no physical element to pull out and use in another device.

Disadvantages of eSIMs

- **Emergencies:** If your phone stops working, runs out of battery or simply, falls and gets a cracked screen, your communication is brought to a complete standstill with eSIMs. Traditional SIMs, meanwhile, can be quickly pulled out of the affected phone and into another backup device or secondary phone.
- **Unusable in countries with no eSIM support:** You cannot use an eSIM phone in a country where the telecom operators simply don't support the technology yet.
- **Support only available in premium phones:** In India, eSIM support is currently available on more expensive devices like the Apple iPhones, Google Pixel series and Samsung Galaxy S-series phones, Samsung Galaxy Z series, all of which can be expensive for the average user. By switching to an eSIM, users will also restrict themselves to choosing from a much smaller selection of devices that support the tech.
- **Telcos have more control:** An eSIM may save you the initial trip to the telecom operator's store to get your SIM card, but you can count on having to rely on your operator every time you want to switch your phone.

Hybrid Propulsion System

Why in News

ISRO successfully tests hybrid motor, eyes new propulsion system for rockets

Important Points

- The Indian Space Research Organisation (ISRO) has successfully tested a hybrid motor, which will pave way for a new propulsion system for the upcoming launch vehicles.
- The test was conducted at ISRO Propulsion Complex (IPRC) at Mahendragiri in Tamil Nadu supported by Liquid Propulsion Systems Centre (LPSC).
- The use of liquids helps throttling and the control over the flow rate of LOX enables the re-start capability.
- While both HTPB and LOX are green, LOX is safer to handle.
- The 30 kN hybrid motor tested at ISRO Propulsion Complex (IPRC) at Mahendragiri in Tamil Nadu on Tuesday is scalable and stackable.
- The test was supported by ISRO's Liquid Propulsion Systems Centre (LPSC). The motor used Hydroxyl-terminated polybutadiene (HTPB) as fuel and liquid oxygen (LOX) as the oxidiser.
- Unlike solid-solid or liquid-liquid combinations, a hybrid motor uses solid fuel and liquid oxidiser.
- In the ground-based test, the flight equivalent 30 kN hybrid motor used Hydroxyl-terminated polybutadiene (HTPB)-based aluminised solid fuel and liquid oxygen (LOX) as the oxidiser. The test was performed for 15 seconds on a 300-mm sounding rocket motor.
- The use of liquids facilitates throttling, and the control over the flow rate of LOX enables the re-start capability.
- Conventional HTPB-based solid propellant motors used in rockets use ammonium perchlorate as oxidiser. In rocket engines, oxidisers supply the oxygen needed for combustion.
- While both HTPB and LOX are green, the cryogenic LOX is safer to handle. And unlike conventional solid motors, the hybrid technology permits restarting and throttling capabilities on the motor.
- The use of liquids facilitates throttling and control over the flow rate of LOX.
- The technology demonstration paves the way for hybrid propulsion-based sounding rockets and an exciting platform for vertical landing experiments for spent-stage recovery.
- As part of perfecting the technology, ISRO will try it out on a sounding rocket launch in future.



Sensing pressure using paper

Why in News

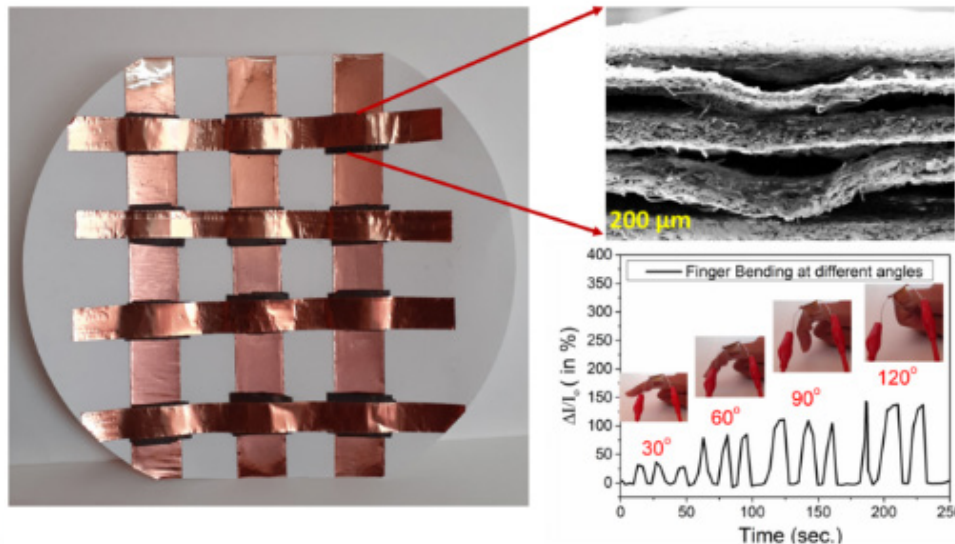
A team of researchers at the Bengaluru-based Indian Institute of Science (IISc) has now fabricated pressure sensors that use paper as the medium.

Important Points

- Several industrial, automotive and healthcare applications rely on accurate and precise measurement of pressure. Pressure sensors are used for this purpose. They detect the physical pressure and convert it into an electrical signal that is displayed as a number indicative of the magnitude.
- Many applications require flexible and wearable pressure sensors. They are typically fabricated using petroleum-based polymers. But, these are non-degradable and solid waste generated from using

them is harmful to the environment.

- To avoid this issue, a team of researchers at the Bengaluru-based Indian Institute of Science (IISc) has now fabricated pressure sensors that use paper as the medium.
- Any sensor always has a trade-off between sensitivity and dynamic range. The new sensor overcomes this problem too. According to scientists, it is highly sensitive and can also detect a wide range of pressures (0-120 kPa) with a response time of just one millisecond.
- The sensor is made of plain and corrugated cellulose papers coated with the chemical tin-monosulfide (SnS), stacked alternatively to form a multi-layered architecture. Tin-monosulfide is a semiconductor that conducts electricity under specific conditions.



- When pressure is applied to the sensor's surface, the air gaps between the paper layers decrease. This increases the contact area between these layers, leading to increased electrical conductivity.
- On releasing the pressure, the air gaps increase again, thus decreasing the electrical conduction. This modulation of the electrical conductivity drives the sensing mechanism of the new sensor.
- Paper in itself is an insulator. The major challenge was choosing an appropriate 3D device structure and material to give conductive properties to paper.
- When pressure is applied on the sensor's surface, the air gaps between the paper layers decrease, increasing the contact area between these layers.
- Higher contact area leads to better electrical conductivity. On releasing the pressure, the air gaps increase again, thus decreasing the electrical conduction. This modulation of the electrical conductivity drives the sensing mechanism of the paper sensor.
- The research team conducted several experiments to test the viability of their device. They mounted it onto a human cheek to investigate the motion involved in chewing.
- They then strapped it to an arm to monitor muscle contraction and around fingers to track their tapping. The team has also designed a numeric, foldable keypad using their sensor.
- The sensor shows promise in being developed into a flexible and wearable electronic device, especially in the healthcare sector. For example, the research team mounted it onto a human cheek to investigate the motion involved in chewing, strapped it to an arm to monitor muscle contraction, and around fingers to track their tapping.
- The team even designed a numeric, foldable keypad constructed using the in-house paper-based pressure sensor to demonstrate the device's usability.

CRISPR

Why in News

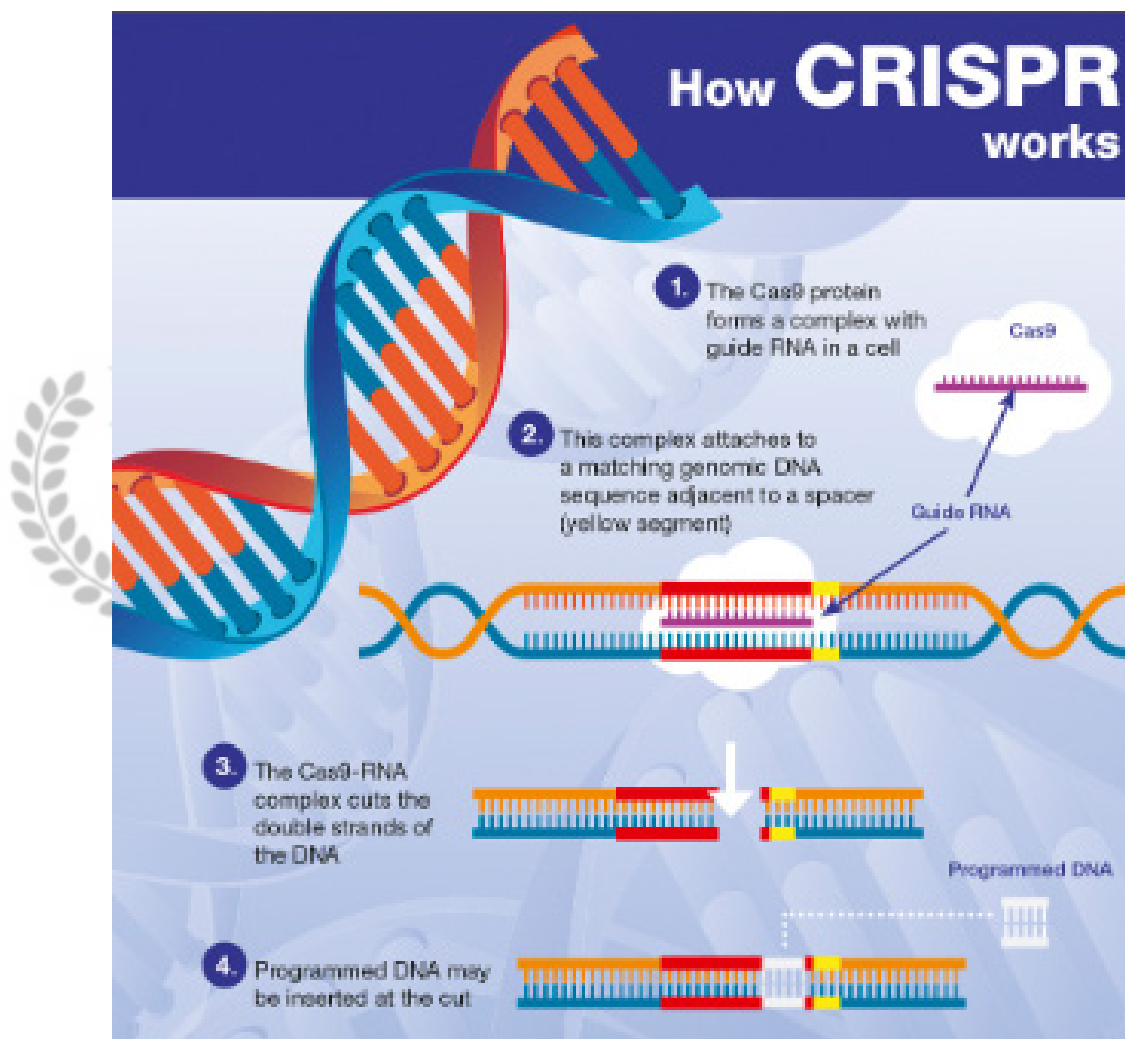
The gene-editing technology which has led to innovations in medicine, evolution and agriculture has completed 10 years of innovation.

Important Points

- Over the last two and a half years, as the coronavirus pandemic ravaged the world and exposed the vulnerabilities of humans to new diseases, scientists continued to push ahead with significant progress in utilising an exciting recent technology for permanent cures to some of the most intractable health disorders.
- In the 10 years since it was developed, the genome-editing technology called CRISPR has begun to

deliver on the near unlimited potential that scientists say it has to improve the quality of human life.

- The technology enables a simple but remarkably efficient way to 'edit' the genetic codes of living organisms, thus opening up the possibility of 'correcting' genetic information to cure diseases, prevent physical deformities, or to even produce cosmetic enhancements.
- Over the last three years especially, several therapeutic interventions using CRISPR for diseases like thalassaemia or sickle cell anaemia have gone into clinical trials, mainly in the United States, and the initial results have been flawless.
- Last year, the Indian government approved a five-year project to develop this technology to cure sickle cell anaemia that mainly afflicts the tribal populations of the country.
- Hundreds of research groups and companies around the world are working to develop a range of specific solutions using CRISPR.
- The developers of the technology, Jennifer Doudna and Emmanuelle Charpentier, won the Nobel Prize for Chemistry in 2020, one of the fastest recognitions accorded by the Nobel committee following a breakthrough.



What is genome editing?

- Genome editing or gene editing is a group of technologies that give scientists the ability to change an organism's DNA.
- Through these technologies, a genetic material can be added, removed or altered at any particular location in the genome.
- Among the many approaches to genetic editing, CRISPR-CAS9 is one of them.
- The CRISPR-Cas9 system has generated a lot of buzz in the scientific community because it is faster, cheaper, more accurate, and more efficient than previous techniques of editing DNA and has a wide range of potential applications.

About CRISPR technology

- CRISPR is short for Clustered Regularly Interspaced Short Palindromic Repeats, which is a reference

to the clustered and repetitive sequences of DNA found in bacteria, whose natural mechanism to fight some viral diseases is replicated in this gene-editing tool.

- Editing, or modification, of gene sequences to eliminate — or introduce — specific properties in an organism is not a new development.
- It has been happening for several decades now, particularly in the field of agriculture, where genetically modified variants, with specific desirable traits, are regularly developed.
- It usually involves the introduction of a new gene, or suppression of an existing gene, through a process described as genetic engineering.
- CRISPR technology is different. It is simple, and still far more accurate — and it does not involve the introduction of any new gene from the outside.
- Its mechanism is often compared to the 'cut-copy-paste', or 'find-replace' functionalities in common computer programmes.
- A bad stretch in the DNA sequence, which is the cause of disease or disorder, is located, cut, and removed — and then replaced with a 'correct' sequence.
- And the tools used to achieve this are not mechanical, but biochemical — specific protein and RNA molecules.
- The technology replicates a natural defence mechanism in some bacteria that uses a similar method to protect itself from virus attacks
- The CRISPR-Cas9 system consists of two key molecules that introduce a change mutation into the DNA.
- Cas9– An enzyme that acts as a pair of 'molecular scissors' that can cut the two strands of DNA at a specific location in the genome.
- Guide RNA (gRNA)- The gRNA is designed to find and bind to a specific sequence in the DNA.
- Depending on the nature of the edit that is carried out, the process is divided into three categories — SDN 1, SDN 2 and SDN 3.
- SDN1 introduces changes in the host genome's DNA through small insertions/deletions without introduction of foreign genetic material.
- In the case of SDN 2, the edit involves using a small DNA template to generate specific changes.
- Both these processes do not involve alien genetic material and the end result is indistinguishable from conventionally bred crop varieties.
- The SDN3 process involves larger DNA elements or full length genes of foreign origin which makes it similar to genetically modified organisms (GMO) development.

Technology in action

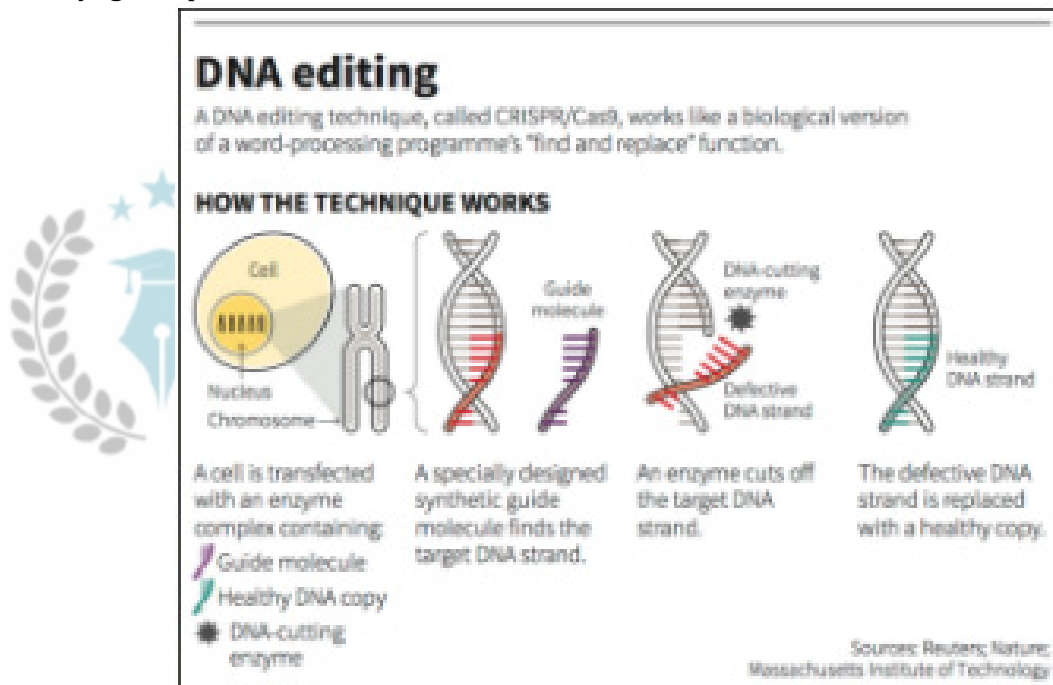
- The first task is to identify the particular sequence of genes that is the cause of the trouble.
- Once that is done, an RNA molecule is programmed to locate this sequence on the DNA strand, just like the 'find' or 'search' function on a computer.
- After this, a special protein called Cas9, which is often described as 'genetic scissors', is used to break the DNA strand at specific points, and remove the bad sequence.
- A DNA strand, when broken, has a natural tendency to re-attach and heal itself.
- But if the auto-repair mechanism is allowed to continue, the bad sequence can regrow.
- So, scientists intervene during the auto-repair process by supplying the correct sequence of genetic codes, which attaches to the broken DNA strand.
- It is like cutting out the damaged part of a long zipper, and replacing it with a normally functioning part.
- The entire process is programmable, and has remarkable efficiency, though chances of error are not entirely ruled out.

Applications of CRISPR Technology

- Health-A vast number of diseases and disorders are genetic in nature that is, they are caused by unwanted changes or mutations in genes.
- These include common blood disorders like sickle cell anaemia, eye diseases including colour blindness, several types of cancer, diabetes, HIV, and liver and heart diseases.
- Many of these are hereditary as well. This technology opens up the possibility of finding a permanent cure to many of these diseases.
- In India CSIR's Institute of Genomics and Integrative Biology have indigenously developed a CRISPR-based therapeutic solution for sickle cell anaemia, which is now being readied for clinical trials.
- Gene abnormalities -This is also true for the deformities arising out of abnormalities in gene sequences, like stunted or slow growth, speech disorders, or inability to stand or walk.
- Also, CRISPR is just a platform; a tool to edit gene sequences. What is to be edited, and where, is dif-

ferent in different cases.

- Therefore, a specific solution needs to be devised for every disease or disorder that is to be corrected.
- The solutions could be specific to particular population or racial groups, since these are also dependent on genes.
- CRISPR-based therapeutic solutions are not in the form of a pill or drug.
- Instead, some cells of every patient are extracted, the genes are edited in the laboratory, and the corrected genes are then re-injected into the patients.
- These mainly pertain to blood disorders, diabetes, inherited eye diseases, and some kinds of cancers.
- The case of Victoria Gray, suffering from sickle cell anaemia, who was in the first batch of patients who were treated using CRISPR-based solutions, has been widely tracked.
- Gray is now considered cured of the disease. Several others who volunteered with her for the trials too have responded positively to the treatment.
- Agriculture – Japan has already approved the commercial cultivation of a tomato variety that has been improved using CRISPR-based intervention.
- Performance -Increasing the tolerance of soldiers against biological or chemical warfare. This technology has the potential to influence human performance optimization.
- Create animal models to mimic human diseases and to understand disease development by mutating or silencing genes.
- Commercial: CRISPR was first used for commercial purposes to make bacterial cultures used in cheese and yoghurt production resistant to viral infections.



The advantages of this technology

- Faster and Cheaper– It is faster and cheaper than previous techniques of editing DNA.
- High accuracy– Genetic engineering has made the work more accurate by allowing scientists to have greater control on trait development.
- Viable compared to GMO– CRISPR technology proves viable against the criticisms of Genetically Modified Organisms (GMO).

Issues associated with this Technology

- Misuse–Because of CRISPR's power to induce dramatic changes in an individual, scientists, including the main developer Doudna, have been warning of the potential for misuse of the technology.
- Designer Baby–In 2018, a Chinese researcher disclosed that he had altered the genes of a human embryo to prevent the infection of HIV.
- This was the first documented case of creating a 'designer baby', and it caused widespread concern in the scientific community.
- Preventive interventions to obtain special traits is not something that scientists currently want the technology to be used for.
- Also, because the changes were made in the embryo itself, the new acquired traits were likely to be passed to future generations.

- Though the technology is fairly accurate, it is not 100 per cent precise, and could induce a few errors as well, making changes in other genes.
- This has the possibility of being inherited by successive generations.
- Impact Diversity– Diversity in all species of animals is a key to evolution on earth. Genetically engineering our species will have a detrimental effect on our genetic diversity- as in something like cloning would.

Way Forward

- Investment in Research and development along with global collaboration to utilise this technology for solving some of the pressing issues faced by mankind like hunger, malnutrition, diseases etc.
- Evolving a code of ethics and conduct for the scientist working with the technology to ensure it is used responsibly and in the right spirit.
- India must evolve a robust legal and regulatory framework to prevent its possible misuse.

India's Quantum Leap

Why in News

IIT Madras Becomes First Institute to Tie Up with IBM Global Network

Important Points

- IBM announced that Indian Institute of Technology Madras (IIT-Madras) has become the first Indian institution to join the IBM Quantum Network to advance quantum computing skills development and research in India.
- As a member of the IBM Quantum Network, IIT Madras will get cloud-based access to IBM's most advanced quantum computing systems and IBM's quantum expertise to explore practical applications and realize the wide-ranging benefits of this technology for business and society.
- IIT Madras' Centre for Quantum Information, Communication and Computing (CQuICC) will focus on advancing core algorithms in research areas like Quantum Machine Learning, Quantum Optimization, and applications research in finance.
- Researchers from IIT Madras will lead the advancement of research in the application of quantum computing with support from IBM Research India to such domains that are relevant to India.
- The announcement is also set to contribute to India's renewed efforts to power up its National Mission on Quantum Technologies & Applications (NM-QTA).

About Quantum Science and Technology

- The field of quantum science and technology is a cutting-edge area of research at IIT Madras.
- At the Centre for Quantum Information, Communication and Computing (CQuICC), IIT Madras focuses on developing various facets of quantum technologies, including secure quantum communications, quantum sensing and metrology, as well as quantum computing and quantum information theory.
- The collaboration will open new avenues to work with industry partners to accelerate research, make quantum real and create a vibrant quantum ecosystem in India.
- IBM and IIT Madras have a long association in education and research areas like Artificial Intelligence and Machine Learning.
- Last year, IIT Madras joined IBM's Quantum Education Program to provide its students and faculty access to IBM quantum learning resources, quantum tools, and quantum systems for education and research purposes.
- IIT Madras currently offers two advanced inter-disciplinary courses on quantum computing for students of physics and computer engineering.

Solving Future Challenges

- While traditional computers store information in bits as either a 1 or 0, quantum computers store data in qubits as either a 1, a 0, or both simultaneously, which makes it millions of times faster than any classical computer. This is what opens doors for researchers to solve several mathematical calculations, and optimisation issues.
- Be it drug discovery, looking for materials for EVs, sustainability or climate change issues, or just improving business efficiency, quantum computers can help address a host of emerging challenges, which the current classical or even supercomputers cannot.

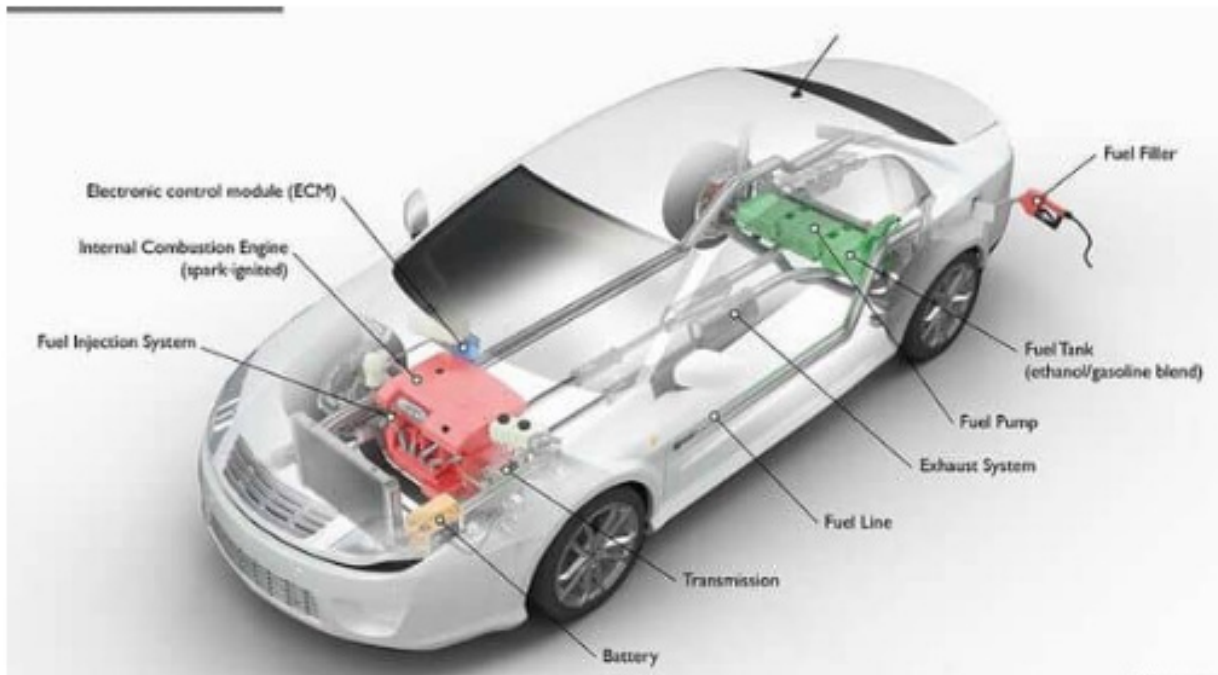
First flex-fuel car

Why in News

Toyota to launch India's first flex-fuel car

Important Points

- India is all set to get its first flex-fuel car by Toyota. The Union Minister of Transport Nitin Gadkari announced that he will launch a new trial project involving Toyota's new car that will be powered by flex-fuel on the sidelines of a recent event.
- The initiative will power India's aim to be among the top global producers in every segment of vehicles over the next 25 years.
- Along with Toyota, other automobile companies are also working to bring flex-fuel vehicles into India's automobile market.
- However, Indians have to wait for some more time to purchase these vehicles from showrooms.



What is Flex-fuel technology?

- Just like their name, these Flex Fuel Vehicles are not confined to a certain kind of fuel and can flexibly run on a blend of petrol and ethanol up to 83%.
- As of now, Flex Fuel Vehicles are available in USA, Brazil, and Canada.
- According to an official US website, as of 2018, around 21 million Flexi Fuel Vehicles were plying on the roads of the United States.
- FFVs are more efficient and show improved acceleration performance when they are fuelled with higher ethanol blends, according to the US Department of Energy.

What makes Flex Fuel cars different from petrol cars?

- According to the US Department of Energy, most of the parts of the Flexible fuel vehicles are similar to that of petrol-only vehicles.
- The FFVs contain mainly an internal combustion engine and can operate on petrol or its blend with ethanol up to 83%.
- What makes these vehicles different from petrol-only vehicles is a set of certain ethanol-compatible components fitted in them.
- There are modifications done to the fuel pump and fuel injection system.
- To accommodate the higher oxygen content of ethanol, FFVs are also calibrated with Engine Control Module.
- It monitors and controls the fuel mixture, ignition timing, and emissions system.
- Along with this, the module also keeps a track of the operation of the vehicle and ensures the safety of the engine from overuse.
- It is also responsible for detecting and troubleshooting problems.

What are the Benefits of the Flex Fuel car?

- One of the prime benefits of flex-fuel car owners over petrol car owners is that they can switch to ethanol whenever they want.
- They will have a wider option of fuels that may shield them from highly volatile fuel prices.
- As of now, ethanol is way cheaper than petrol in India, providing scope for the flex fuel car owners to use the fuel to save on their fuel bills.
- It will also help India in reducing its dependence on fuel imports.

AVGAS 100 LL

Why in News

Indian Oil launches indigenous production of aviation fuel AVGAS 100 LL

Important Points

- In a big step towards reducing dependence on imports to meet energy needs the government-run Indian Oil Corporation (IOC) has launched indigenous production of AVGAS 100 LL, a special aviation fuel meant for piston engine aircrafts and unmanned ariel vehicles.
- The launch event hosted by Indian Oil Corporation at Hindan Air Force Station witnessed participation by senior officials from the Indian Air Force, Flying Training Organisations and the ministries of petroleum and civil aviation

AVGAS 100LL

- Aviation gasoline, commonly known as “AVGAS”, and jet fuel are two different types of petroleum-based fuel used to power airplanes and other crafts.
- Aviation Gasoline 100LL (AVGAS 100LL) is a lower lead version of Aviation Gasoline 100 (0.56g lead/litre Max). It is excellent for use in piston engine-powered private, commercial and military training aircraft.
- The aviation fuel is mainly used by FTOs and defence forces for training pilots.

Reducing Import Dependency

- At present, AVGAS 100 LL is completely imported, primarily from European countries. India has a consumption of around 3,000 kilo litres per year, which was imported by IOC.
- The domestic production will ensure that all flight schools and all other smaller aircrafts that use AV Gas 100 LL are able to buy this locally and save money.
- By becoming self-reliant in AV Gas India will save approximately Rs 20,000-30, 000/Kilo Litre, make flying training more affordable in the country.

Production at Gujarat

- IOCL will start producing AV GAS 100 LL at its flagship refinery at Vadodara, in Gujarat, which will not only cater to Indian demand, but can also export.
- Indian Oil is proud to introduce this specialized fuel by leveraging our refining strength and in-house expertise.
- In fact, the indigenous fuel is superior compared to the imported grades.
- AV Gas market is expected to grow from the current \$1.92 billion to \$ 2.71 billion by 2029.
- The fuel has been tested and certified by Directorate General of Civil Aviation (DGCA), the national civil aviation regulator.

Multiple Benefits

- The indigenous availability of AV GAS 100 LL will help reduce dependence on imports and address the associated logistical challenges. India will be able to save precious foreign exchange with domestic availability of this product.
- This will also benefit more than 35 FTOs across India.
- With the domestic availability of this product, Ministry of Civil Aviation is considering opening more training institutes in the country.
- Seeing the increase in aviation traffic, requirement of trained pilots is expected to increase.

Chapter-6

SOCIAL ISSUES

WhatsApp privacy policy

Why in News

WhatsApp's new privacy policy has left many unnerved as data privacy has become a significant cause of concern.

Important Points

- WhatsApp announced its new data privacy policy in early February and prompted the users to comply with it by February 8, 2021.
- However, due to an intense public misperception and confusion, WhatsApp eventually delayed the implementation till May 15, 2021 and then agreed to make it implementable post the enactment of the Personal Data Protection Bill in India.
- The new WhatsApp privacy policy affects data concerning exchanges with WhatsApp Business accounts and not the regular WhatsApp accounts.
- Importantly, the policy doesn't expand WhatsApp's ability to share data with Facebook.
- WhatsApp currently offers three services to the users, namely, WhatsApp (for personal chats), WhatsApp Business (for small service providers and businesses) and WhatsApp API (for integrating the applications of larger organisations and also used by the government).
- The change in WhatsApp's Privacy Policy majorly impacts the WhatsApp Business application and not as much the other services. According to the new privacy policy, WhatsApp will share user-data with other Facebook companies only.
- The general users are under this misconception that WhatsApp will tap into our chats, communications, and media sharing through this metadata and make them public despite all communications continuing to remain end-to-end encrypted.

What is metadata?

- Metadata is mostly the data used to identify your device's general location, IP addresses, time zone, phone model, OS, battery level, signal strength, browser, mobile network, ISP, language, time zone, usage patterns, diagnostic reports (in case your application crashes) and even IMEI.

WHAT YOU GET ON WHATSAPP, OTHER APPS			
			
FEATURES	WHATSAPP	SIGNAL	TELEGRAM
End-to-End Encryption (E2E)	Yes	Yes	Only 'Secret Chats' and all calls
Disappearing Messages	Yes	Yes	Yes
Chat backups	Yes, but third-party	No, stored locally on device	Yes, but on Telegram's Cloud
Screen Lock	Yes	Yes	Yes
Advertisements	No	No	No, but plans to add
Group Chat Security	Yes, E2E	Yes, E2E	No
Video and Voice Calls	Yes	Yes	Yes

India's Stand

- The Delhi High Court has held that WhatsApp's 2021 privacy policy places its users in a "take it or leave it" situation, virtually forcing them into an agreement by providing a mirage of choices and then sharing their data with its parent company Facebook.
- The High Court's verdict came while dismissing appeals of WhatsApp and Facebook against an order rejecting their challenge to a probe ordered by the Competition Commission of India (CCI) into the instant messaging platform's updated privacy policy of 2021.
- A Bench of Chief Justice Satish Chandra Sharma and Justice Subramonium Prasad said the single judge's April 22, 2021 order was well-reasoned and the appeals are devoid of merit and substance that would warrant the interference of this court.
- The high court noted that the instant messaging platform, WhatsApp, occupies a dominant position in the market for OTT (over-the-top) messaging apps through smartphones in India.
- In April last year, a single judge of the high court had refused to interdict the investigation directed by the CCI on the petitions moved by WhatsApp LLC and Facebook Inc. — now Meta platforms.
- In January last year, the CCI on its own had decided to look into WhatsApp's updated privacy policy based on news reports regarding the same.

Why do you need to accept WhatsApp's new privacy policy?

- If you don't accept the new privacy policy, you won't lose full functionality immediately as the company will gradually disable all the features.
- WhatsApp is saying that it will continue to send the reminder to accept the new policy, and after a period of several weeks, the company will limit the functionality for those who don't accept the update.
- The moment WhatsApp starts sending "persistent reminders," users will encounter limited functionality on WhatsApp until they accept the updates.

A quick recap of the new WhatsApp privacy policy

- WhatsApp has reiterated that its messaging app is end-to-end encrypted and that it doesn't have access to your private chats or location.
- The company doesn't share private messages or other data with Facebook. But, the new update will enable WhatsApp to use some of the "business conversations" hosted with the social network for advertising.

NDPS Act

Why in News

The Karnataka High Court has recently granted bail to a man arrested for bhang and ganja, and argued that NDPS Act nowhere mentions it as a prohibited drink/ drug.

Important Points

- While granting bail to a man arrested for possessing 29 kg of bhang and 400 g of ganja, Karnataka High Court recently observed that nowhere in the Narcotic Drugs and Psychotropic Substances (NDPS) Act is bhang referred to as a prohibited drink or prohibited drug.
- Since the ganja recovered was below commercial quantity, the accused was given bail on a personal bond of Rs 2 lakh.
- The single judge Bench relied on two earlier judgments, *Madhukar vs the State of Maharashtra*, 2002 and *Arjun Singh vs State of Haryana*, 2004, where the courts had ruled that bhang is not ganja, and is therefore not covered under the NDPS Act.

What is bhang?

- Bhang is the edible preparation made from the leaves of the cannabis plant, often incorporated into drinks such as thandai and lassi, along with various foods. Bhang has been consumed in the Indian subcontinent for centuries, and is frequently consumed during the festivals of Holi and Mahashivratri.
- Its widespread use caught the attention of Europeans, with Garcia da Orta, a Portuguese physician who arrived in Goa in the 16th century, noting that, "[Bhang] is so generally used and by such a number of people that there is no mystery about it".

Bhang and the law

- Enacted in 1985, the NDPS Act is the main legislation that deals with drugs and their trafficking. Various provisions of the Act punish production, manufacture, sale, possession, consumption, purchase, transport, and use of banned drugs, except for medical and scientific purposes.
- The NDPS Act defines cannabis (hemp) as a narcotic drug based on the parts of the plant that come under its purview. The Act lists these parts as:
 - Charas: “The separated resin, in whatever form, whether crude or purified, obtained from the cannabis plant and also includes concentrated preparation and resin known as hashish oil or liquid hashish.”
 - Ganja: “The flowering or fruiting tops of the cannabis plant (excluding the seeds and leaves when not accompanied by the tops), by whatever name they be known or designated.”
 - “Any mixture, with or without any neutral material, of any of the above forms of cannabis or any drink prepared therefrom.”
- The Act, in its definition, excludes seeds and leaves “when not accompanied by the tops”. Bhang, which is made with the leaves of the plant, is not mentioned in the NDPS Act.
- As a “special provision”, the Act states that the government “may allow cultivation of any cannabis plant for industrial purposes only of obtaining fibre or seed or for horticultural purposes”.

THE HIGHS AND LOWS OF THE NDPS LAW

HOW ACT EVOLVED

1985 | Narcotic Drugs and Psychotropic Substances Act enacted to consolidate narcotic drug laws; Act views drug offences seriously and mandates stiff penalties

1989 | Act amended with strict provisions; sections added include under 27A for ‘financing illicit traffic’

> ‘Illicit traffic’ means production, possession, sale, purchase, transportation, warehousing, use. Rhea is booked under Section 27A

2001 | Act amended to rationalize sentencing; easy on ‘addicts’; bail liberalised;



IIAS
Education

QUANTITY AT PLAY

Act now defines three categories: ‘small quantity’, ‘commercial’ and ‘more than small but less than commercial’

PENALTIES FOR POSSESSION:

Small quantity

Up to 1 year rigorous imprisonment or fine up to ₹10,000 or both



Commercial quantity

10-20 yrs RI and fine of ₹1-2 lakh

More than small quantity but less than commercial quantity

Up to 10 years RI, fine up to ₹1 lakh

PROVISION FOR ADDICTS:

> Small quantity in possession attracts immunity from prosecution



DEFINITION OF SMALL AND COMMERCIAL QUANTITIES:

DRUG	SMALL	COMMERCIAL
Stimulants:		
Amphetamine	2g	50g
Cocaine (crack)	2g	100g
Hallucinogens:		
Charas/hashish/marijuana/cannabis	100gm	1kg
Ganja	1kg	20kg
Lysergic Acid Diethylamide (LSD)	0.002g	0.1g
Narcotics:		
Morphine, Heroin (smack/brown sugar)	5g	250g
Fentanyl	0.005g	0.1g
Diazepam, methaqualone (Mandrax)	20g	500g
Methamphetamine	2g	50g
MDMA (ecstasy)	0.5g	10g
Opium	25g	25kg
Buprenorphine, semi-synthetic opiod	1g	20 g
Codeine	10g	1kg

> Consumption is an offence under sec 27 of NDPS Act and punishable with imprisonment of up to 1 year (in case of some drugs) or six months (for all other drugs)

> However, addicts volunteering for treatment get immunity under section 64A of the Act

Cannabis and criminal liability

- Section 20 of the NDPS Act lays out the punishment for the production, manufacture, sale, purchase, import and inter-state export of cannabis, as defined in the Act. The prescribed punishment is based on the amount of drugs seized.
- Contravention that involves a small quantity (100 g of charas/hashish or 1 kg of ganja), will result in rigorous imprisonment for a term that may extend to one year and/or a fine which may extend to Rs 10,000.
- For a commercial quantity (1 kg charas/ hashish or 20 kg ganja), rigorous imprisonment of not less than 10 years, which may extend to 20 years, including a fine that is not less than Rs 1,00,000 but may extend to Rs 2,00,000.

Jigyasa 2.0

Why in News

Ministry of S&T recently organized Jigyasa 2.0 for the renewable fuel program

Important Points

- A four-day “Jigyasa for Renewable Fuel” program under Jigyasa 2.0 program was successfully organized for the students of XIth class of Scindia Kanya Vidyalaya, Gwalior at CSIR-Indian Institute of Petroleum, Dehradun.
- The main objective of the program is to give an exposure to different technologies developed for the utilization of non-edible vegetable oils, used cooking oil and waste plastic to different types of fuels.
- Program motivates the students to look for different types of waste they are generating in their daily life and suggested the paths to minimize the waste generation and further utilization for energy & fuel
- During this program, students got an opportunity to interact with the Scientists and technical officers of CSIR-Indian Institute of Petroleum.
- A series of lectures were delivered on different themes like, Renewable Fuel, Alternate Fuel, H2 as future Fuel, Electrical Vehicle retrofitting, Artificial Intelligence & Machine Learning, Petrochemicals and Polymers.
- Students also get exposure to process of RUCO to Biodiesel as well as dry ice formation from CO₂.
- Besides this, students also visited various laboratories such as Bio-technology & Biochemistry lab, Adsorption & Membrane Separation lab CFR Engines, Emission Testing Lab, Thermo Catalytic Process Lab, advanced crude oil research centre, IR, and GC-MS lab.



CSIR VIRTUAL LAB

- CSIR Jigyasa Virtual Lab (CJVL) is an extension of CSIR Jigyasa program.
- The successful launch and abundance interest towards CSIR Jigyasa resulted in setting up the virtual

lab.

- Research survey was carried out by CSIR-NCL on the existing Indian and International virtual labs and a study was conducted on the NEP & STIP policies. Discussion meetings and presentations were made.
- In 2020, a pilot phase of six months was carried out by the CSIR laboratories for developing fun activities based on science for students.
- The software development is outsourced to IITB, Mumbai on an MOU signed between CSIR-NCL and IITB.
- The objective of CJVL is to create scientific models and make them interesting to students so that students can engage with science by having fun. This platform offers free access to students online as well as offline.
- The platform consists of dual potential namely Jigyasa and Virtual lab thus upgrading it to higher version 2.0.
- It boosts to encourage and inculcate culture of inquisitiveness, critical thinking on one hand and technology oriented thinking, self-learning, scientific temper on the other.
- It will continue with existing engagement modules and also offer newer modules to retain student enthusiasm.

Models of Engagement under CSIR- Jigyasa Program

- Student Residential Programmes
- Scientists as Teachers and Teachers as Scientists
- Lab specific activities / Onsite Experiments
- Visits of Scientists to Schools/Outreach Programmes
- Science and Maths Clubs
- Popular Lecture Series/ demonstration programme at Schools
- Student Apprenticeship Programmes
- Science Exhibitions
- Projects of National Children's Science Congress
- Teacher Workshops
- Tinkering Laboratories

Scheme for promotion of Bulk Drug Parks

Why in News

Centre gives 'in-principle' approval for 3 bulk drug parks in Gujarat, HP and AP

Important Points

- The Government of India has granted 'in-principle' approval for setting up three bulk drug parks, one each in Himachal Pradesh, Gujarat and Andhra Pradesh, the Ministry of Chemicals and Fertilizers.
- The Department of Pharmaceuticals has conveyed 'in-principle' approval to the proposals of the three States viz, Himachal Pradesh, Gujarat and Andhra Pradesh under the Scheme for "Promotion of Bulk Drug Parks", a key initiative to support the Bulk Drugs manufacturing in the country.
- The scheme, with a financial outlay of Rs 3,000 crore notified in 2020, provides for financial assistance to three states for establishing Bulk Drug Parks and aims to bring down the cost of manufacturing of bulk drugs by creation of world-class common infrastructure facilities supported by the Central Government and thereby increase the competitiveness of the domestic bulk drug industry.
- The Indian Pharmaceutical industry is the third largest in the world by volume.
- India exported pharmaceuticals worth Rs 175,040 crore in the financial year 2021-22, including Bulk Drugs/ Drug Intermediates.
- Also, India is one of the major producers of Active Pharma Ingredients (API) or bulk drugs in the world. India exported Bulk Drugs/ Drug Intermediates worth Rs 33,320 crore in the financial year 2021-22.
- The country also imports various Bulk Drugs/ APIs for producing medicines from various countries.

Most of the imports of the Bulk Drug/APIs being done in the country are because of economic considerations.

- The Government strives to minimize the country's dependence on imports and to give fillip to indigenous manufacturing.
- In order to make the country self-reliant in APIs and drug intermediates, the Department of Pharmaceuticals is implementing various schemes and one of the key interventions is the Scheme for Bulk Drug Parks.
- The Bulk Drug Parks to be developed under the scheme will provide common infrastructure facilities at one place thereby creating a robust ecosystem for Bulk Drug manufacturing in the country and also reducing the manufacturing cost significantly.
- This scheme is expected to encourage domestic manufacturing of bulk drugs to reduce import dependence and to establish a dominant position in the global market by providing easy access to standard testing & infrastructure facilities.
- This scheme will also help the industry meet the standards of the environment at a reduced cost through innovative methods of the common waste management system and also to exploit the benefits arising due to optimization of resources and economies of scale.
- Under the scheme, proposals were received from 13 States. The Department was assisted by an Advisory Committee under CEO, NITI Aayog in the appraisal of the proposals, based on the quantitative as well as qualitative methodology.
- The financial assistance to the proposed Bulk Drug Park in Gujarat and Andhra Pradesh would be 70 per cent of the project cost of common infrastructure facilities.
- In case of Himachal Pradesh, being Hilly States, financial assistance would be 90 per cent of the project cost. Maximum assistance under the scheme for one Bulk Drug Park would be limited to Rs 1,000 crore.
- The scheme reflects the spirit of co-operative federalism where the Central Government and State Governments will partner to develop the Bulk Drug parks for better performance of the sector.
- Other interventions of the Department, in ensuring domestic manufacturing of Bulk Drugs, include: The Production Linked Incentive (PLI) Scheme for domestic manufacturing of KSMs/ Drug Intermediates (DIs) and APIs.
- Under this scheme, a total of 51 projects have been approved, out of which, 14 projects have already commissioned and started manufacturing of the drugs and PLI for Pharmaceuticals, provides for financial incentive to 55 selected applicants for manufacturing of identified products under three categories and eligible drugs under this scheme include APIs.

Breakthrough Agenda Report 2022

Why in News

A report on the progress of how countries have aligned their action plan and investment for clean technology commitment to mitigate climate change.

Important Points

- The Breakthrough Agenda Report 2022 is a new report by the International Energy Agency (IEA), the International Renewable Energy Agency (IRENA) and the UN Climate Change High-Level Champions.
- It focused on supporting stronger international collaboration to drive faster reductions in global greenhouse gas emissions.
- Without international cooperation, the crucial global transition to net zero emissions could be delayed by decades.
- The faster the transition advances, the faster it will deliver clean technologies at lower cost, making them available for all. This is all the more urgent in the context of recent sharp spikes in energy and food prices around the world.
- The Breakthrough Agenda is an unprecedented international clean technology plan to help keep 1.5°C in reach. It provides a framework for countries and businesses to join up and strengthen their actions every year.

- This inaugural report assesses progress on reducing emissions in five key sectors – power, hydrogen, road transport, steel and agriculture.
- The authors make recommendations to strengthen collaboration between governments, business and civil society in areas such as common standards, technology R&D, reaching a level playing field for trade, and improving technical and financial assistance.
- This is a first-of-its-kind annual progress report, requested by world leaders at the UN Climate Change Conference COP26 in November 2021 as part of the launch of the Breakthrough Agenda.
- The Breakthrough Agenda currently covers more than two-thirds of the global economy, with endorsement from 45 world leaders, including those of the G7, China and India.
- The report is designed to inform policy makers, business leaders and civil society organisations of the most urgent ways to strengthen collaboration in and across major emitting sectors ahead of the Global Clean Energy Action Forum in Pittsburgh in September 2022, the next UN Climate Change Conference COP27 in Sharm El-Sheikh, Egypt, and beyond.

Lumpy Skin Disease

Why in News

Lumpy Skin Disease is a viral illness that causes prolonged morbidity in cattle and buffaloes.

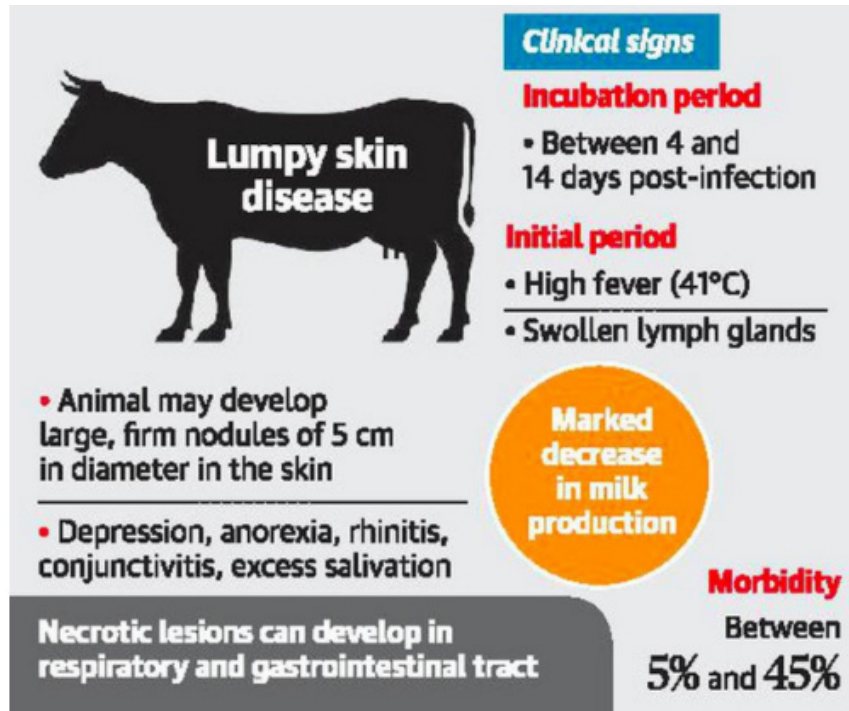
Important Points

- The Mumbai Police have ordered the prohibition of cattle transportation in the city to prevent the spread of the lumpy skin disease. This means cattle cannot be moved out of the place they are being raised or transported to marketplaces.
- The disease has killed 127 cattle in Maharashtra, having spread to 25 districts.
- The contagious viral infection has spread in cattle in more than 10 States and Union Territories so far.
- Centre and States are working together to control the spread of the disease, which has emerged as a concern for the dairy sector.

What is the lumpy skin disease and how does it spread?

- Lumpy skin disease is caused by the lumpy skin disease virus (LSDV), which belongs to the genus capripoxvirus, a part of the poxviridae family (smallpox and monkeypox viruses are also a part of the same family).
- The LSDV shares antigenic similarities with the sheeppox virus (SPPV) and the goatpox virus (GTPV) or is similar in the immune response to those viruses.
- It is not a zoonotic virus, meaning the disease cannot spread to humans. It is a contagious vector-borne disease spread by vectors like mosquitoes, some biting flies, and ticks and usually affects host animals like cows and water buffaloes.
- According to the United Nations Food and Agriculture Organisation (FAO), infected animals shed the virus through oral and nasal secretions which may contaminate common feeding and water troughs.
- Thus, the disease can either spread through direct contact with the vectors or through contaminated fodder and water.
- Studies have also shown that it can spread through animal semen during artificial insemination.
- LSD affects the lymph nodes of the infected animal, causing the nodes to enlarge and appear like lumps on the skin, which is where it derives its name from.
- The cutaneous nodules, 2–5 cm in diameter, appear on the infected cattle's head, neck, limbs, udder, genitalia, and perineum. The nodules may later turn into ulcers and eventually develop scabs over the skin.
- The other symptoms include high fever, sharp drop in milk yield, discharge from the eyes and nose, salivation, loss of appetite, depression, damaged hides, emaciation (thinness or weakness) of animals, infertility and abortions.
- The incubation period or the time between infection and symptoms is about 28 days according to the FAO, and 4 to 14 days according to some other estimates.
- The morbidity of the disease varies between two to 45% and mortality or rate of death is less than 10%, however, the reported mortality of the current outbreak in India is up to 15%, particularly in

cases being reported in the western part (Rajasthan) of the country.



What is the geographical distribution and how did it spread to India?

- The disease was first observed in Zambia in 1929, subsequently spreading to most African countries extensively, followed by West Asia, Southeastern Europe, and Central Asia, and more recently spreading to South Asia and China in 2019.
- As per the FAO, the LSD disease is currently endemic in several countries across Africa, parts of West Asia (Iraq, Saudi Arabia, Syrian Arab Republic), and Turkey.
- The spread in South Asia first affected Bangladesh in July 2019 and then reached India in August that year, with initial cases being detected in Odisha and West Bengal.
- The FAO points out: "The long porous borders between India, Nepal and Bangladesh allow for a significant amount of bilateral and informal animal trade, including cattle and buffaloes."
- This, the UN body says, may have contributed to the spread of LSD in July-August 2019 between Bangladesh and India.

Is it safe to consume the milk of affected cattle?

- Studies say that it has not been possible to ascertain the presence of viable and infectious LSDV virus in milk derived from the infected animal.
- FAO notes, however, that a large portion of the milk in Asia is processed after collection and is either pasteurised or boiled or dried in order to make milk powder. This process ensures that the virus is inactivated or destroyed.
- It is safe to consume milk from the infected cattle. There is no problem in the quality of milk even if you have it after boiling or without boiling.

What is the government doing?

- The FAO has suggested a set of spread-control measures for LSD, which involves vaccination of susceptible populations with more than 80% coverage, movement control of bovine animals and quarantining, implementing biosecurity through vector control by sanitising sheds and spraying insecticides, strengthening active and passive surveillance; spreading awareness on risk mitigation among all stakeholders involved, and creating large protection and surveillance zones and vaccination zones.
- The Union Ministry of Fisheries, Animal Husbandry and Dairying informed that the 'Goat Pox Vaccine' is "very effective" against LSD and is being used across affected States to contain the spread. As of the first week of September, 97 lakh doses of vaccination have been administered.
- Lumpy skin disease has killed 127 cattle in Maharashtra. The contagious viral infection has spread in

cattle in more than 10 States and Union Territories so far.

- Lumpy skin disease virus shares antigenic similarities with the sheeppox virus and the goatpox virus. It is not a zoonotic virus, meaning the disease cannot spread to humans.
- LSD affects the lymph nodes of the infected animal, causing the nodes to enlarge and appear like lumps on the skin, which is where it derives its name from.

KRITAGYA 3.0

Why in News

ICAR hoisting Hackathon 3.0 “KRITAGYA” to promote Speed Breeding of crops

Important Points

- The Indian Council of Agricultural Research (ICAR) is hosting Hackathon 3.0 “KRITAGYA” to promote “speed breeding for crop improvement” in association with its National Agricultural Higher Education Project and Crop Science Division.
- This initiative aims to help the crop sector achieve the desired immediate results by fostering employability, entrepreneurship, innovation, and problem-solving skills.
- Additionally, it will encourage the nation to adopt more technologically advanced solutions.
- The applicants are required to present potential solutions to very specific problems with crop improvement, for instance, less expensive and more efficient materials for rapid generation advancement facilities, accurate and convenient diagnostic tools for illnesses, insect pests, produce quality, digital breeding platforms, and other difficulties with varieties, seeds encountered nearby the applicant, specific area or state.
- **The definition of KRITAGYA is:** KRI for Krishi meaning Agriculture, TA for Taknik meaning Technology, and GYA for Gyan meaning Knowledge, says Dr. Rakesh Chandra Agrawal, Deputy Director General (Agricultural Education) and National Director, National Agricultural Higher Education Project (NAHEP).
- Students, faculty, and entrepreneurs from any university or technical institute in the nation are eligible to take part in the competition as a group of up to four members. Students can participate and win up to INR 5 lakhs.
- **Solutions for Speed breeding for crop improvement to be the prime focus**
- Global food security has become a major concern due to the expanding human population and the changing environment, as the current rate of improvement of several important crops is insufficient to meet future demand.
- Speed breeding is currently being used widely as a solution in this direction to shorten generation times and allow for multiple generations of crops per year.
- Researchers are now using an integrated strategy that combines speed breeding with contemporary plant breeding and genetic engineering technologies to increase breeding efficiency.
- By reducing the breeding cycles for establishing nutritional security and sustainable agriculture, speed breeding is a viable technology that accelerates the goals of food and industrial crop improvement.
- This programme is also in line with the National Education Policy-2020, which will give students, faculty, entrepreneurs, innovators, and others the chance to showcase cutting-edge methods and technological advancements to support crop improvement.

About Hackathon 1.0 & 2.0

- Hackathon 1.0 (Promoting Innovation in Farm Mechanization) was organised in the year 2020 to promote potential technology solutions for enhancing farm mechanization with special emphasis on women-friendly equipments. It saw a participation of more than 784 teams (2479 participants).
- Out of the selected teams for the National level KRITAGYA Agtech Hackathon 1.0 (2020-21), 4 teams were awarded a cash prize of Rs. 9 lakh. Hackathon-2.0 (Innovations for Precision and Economical Animal Farming) was held in the year 2021.
- With the help of the World Bank (WB), ICAR launched NAHEP in November 2017. NAHEP’s overarching goal is to assist participating Agricultural Universities (AUs) and ICAR in helping students receive a more pertinent and superior education.

India Discrimination Report-2022

Why in News

The Oxfam India has recently released 'India Discrimination Report 2022'.

Important Points

- Oxfam India's Discrimination Report 2022 blames "societal and employers' prejudices" for women's lower wages.
- Indian women face discrimination in the job market and earn less than men even when they have the same qualifications and experience, a new report says.

Key Highlights of the report-

- According to the report, gender discrimination is the reason for 98 per cent of employment gap between males and females in India.
- The report highlighted that woman in India despite their same educational qualification and work experience as men will be discriminated in the labour market due to societal and employers' prejudices.
- The report shows that discrimination causes 100 per cent of employment inequality faced by women in rural areas in labour market and 98 per cent in urban areas.
- The report said self-employed males earn 2.5 times more than females, 83 per cent of which is attributed to gender-based discrimination and 95 per cent of the gap between the earnings of male and female casual wage workers is due to discrimination.
- The report further said that 93 per cent of the gap in earnings of males and females is due to discrimination.
- It says that rural self-employed males earn twice of what females earn in rural areas. Male casual workers earn Rs 3,000 per month more than females, 96 per cent of which is attributed to discrimination.
- The academically recognised statistical model applied in the report is now able to quantify the discrimination women face in the labour market.
- The lower wages for salaried women are due to 67 per cent of discrimination and 33 per cent due to lack of education and work experience.
- The inequality in the labour market for gender and other social categories is not just due to poor access to education or work experience but because of discrimination.
- It has found that discrimination is a driving factor behind low Labour Force Participation Rate (LFPR) of women in the country.
- These findings are based on the government data on employment and labour from 2004-05 to 2019-20.
- The Oxfam India report refers to unit level data from 61st round National Sample Survey (NSS) data on employment-unemployment (2004-05), the Periodic Labour Force Survey in 2018-19 and 2019-20 and All India Debt and Investment Survey by the government.
- Oxfam India is a non profit organization working to support child education, empowering women & fighting against inequality in India.

What is the Labour Force Participation Rate (LFPR)?

- It is the percentage of the population which is either working (employed) or seeking for work (unemployed).
- According to the International Labour Organisation (ILO), the LFPR is a 'measure of the proportion of a country's working-age population that engages actively in the labour market, either by working or looking for work'.

Method of computation

The labour force participation rate is calculated as follows:

$$\text{LFPR(\%)} = \frac{\text{Labour force}}{\text{Working-age population}} \times 100$$

$$\text{LFPR(\%)} = \frac{\text{Persons employed} + \text{persons unemployed}}{\text{Working-age population}} \times 100$$

- The breakdown of the labour force (formerly known as economically active population) by sex and age group gives a profile of the distribution of the labour force within a country.
- As per the ministry of statistics and programme implementation, LFPR for women in India was only 25.1% in 2020-21.
- This is considerably lower than Brazil, Russia, China and South Africa as per the latest World Bank estimates. LFPR for women in South Africa was 46% in 2021.

Modern Slavery

Why in News

There are 50 million people in situations of modern slavery on any given day.

Important Points

- Some 49.6 million people are trapped in modern slavery on any given day. They are either forced to work against their will or are in a marriage that they have been forced into, according to the 2021 Global Estimates of Modern Slavery released report.
- Forced labour accounted for 27.6 million of those in modern slavery and forced marriage for 22 million. The new estimates showed that forced labour and forced marriage had increased significantly in the last five years.
- The report by the International Labour Organization (ILO), Walk Free and the International Organization for Migration found that 10 million more people were trapped in modern slavery in 2021, compared to 2016 global estimates. Women and children were especially vulnerable.
- The Asia-Pacific region had the highest number of people in modern slavery and the Arab states the highest prevalence. But no region, developed or developing, was free from the practice.
- The COVID-19 pandemic had increased the risk of modern slavery and made the target of ending it among children by 2025 and universally by 2030 even more difficult.

Forced labour and marriage

- Modern slavery comprises two principal components — forced labour and forced marriage.
- The ILO Forced Labour Convention, 1930 describes forced labour as “all work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily.”
- Of the 27.6 million people in situations of forced labour on any given day, 11.8 million are women and girls while 3.3 million are children.
- Asia and the Pacific host 15.1 million people in forced labour, followed by Europe and Central Asia with 4.1 million; Africa with 3.8 million; the Americas with 3.6 million and the Arab states with 0.9 million.
- The 2021 Global Estimates of Modern Slavery showed that 86 per cent of all forced labour was imposed by private agents — 63 per cent in forced labour exploitation and 23 per cent in forced commercial sexual exploitation. State-imposed forced labour accounted for the remaining 14 per cent.
- Migrant workers, who are not protected by law and are unable to exercise their rights, face a higher risk of forced labour than other workers.
- Forced marriage refers to situations where a person has been forced to marry without their consent. Child marriage is also considered a form of forced marriage. Between 2016 and 2021, there was a 6.6 million increase in the number of people living in a forced marriage.
- The increase in forced marriage can be partially explained by compounding crises — COVID-19 pandemic, conflicts and climate change.
- These crises have led to unprecedented increases in extreme poverty, lower education rates, a rise in distress migration and significant increases in reports of gender-based violence. These factors are associated with increased vulnerability to forced marriage.
- Nearly two-thirds of all forced marriages (14.2 million) are in Asia and the Pacific. This number is followed by 14.5 per cent in Africa (3.2 million) and 10.4 per cent Europe and Central Asia (2.3 million).
- COVID-19 has led to increased risk of forced marriage in every region. Increases in child and forced marriages have been reported in Afghanistan, Bangladesh, India, Indonesia, Sudan, Egypt, Yemen, Jordan, Senegal, Uganda and the Democratic Republic of the Congo.

- Once forced to marry, there is greater risk of further exploitation, including sexual exploitation, domestic servitude and violence and other forms of forced labour both inside and outside the home.
- The 2021 Global Estimates of Modern Slavery said the freedom of workers to associate and bargain collectively was indispensable to a world free from forced labour.
- More than 40 per cent of the world's population lives in countries that have not ratified either the ILO Freedom of Association and Protection of the Right to Organise Convention, 1948 (No 87) or the ILO Right to Organise and Collective Bargaining Convention, 1949 (No 98)..
- Further restrictions on the universal rights to establish and join a trade union and to bargain collectively persist in law or in practice in many countries.

Popular Front of India

Why in News

India declared the Popular Front of India (PFI) Islamic group and its affiliates unlawful.

Important Points

- The MHA via a notification on Tuesday banned the Popular Front of India (PFI) and its associates for five years for links to terrorist groups and subversive activities. The ban was recommended by the state governments of Uttar Pradesh, Karnataka and Gujarat, the Centre stated in the notification.
- The PFI thus joins LeT, JeM, Simi, al Qaida and several other groups on the 'banned' list.
- Explaining the reasons for the ban, the MHA notification said PFI and its allies have been indulging in unlawful activities prejudicial to the integrity, sovereignty and security of the country.

Here's what the Centre cited in its notification to ban PFI:

1. Ban on affiliates too

- Eight other organisations, with clearly established links to PFI and functioning as its affiliates, have also been banned by the MHA order. These are: Rehab India Foundation (RIF), Campus Front of India (CFI), All India Imams Council (AIIC), National Confederation of
- Human Rights Organization (NCHRO), National Women's Front, Junior Front, Empower India Foundation and Rehab Foundation, Kerala.

2. Efforts to radicalize a community

- PFI and its affiliates have been working covertly to increase radicalization of a community by promoting a sense of insecurity, the MHA notification said. This is borne out by the fact that some PFI cadres have joined international terrorist organisations, it further said.
- The PFI has been further accused of indulging in unlawful activities prejudicial to the integrity, sovereignty and security of the country with the potential of disturbing peace and communal harmony.

3. Links to Isis

- MHA has cited the PFI's links to international terror groups like Isis in its ban notification.
- PFI cadres have participated in terror activities in Syria, Iraq and Afghanistan, and several of them were killed or arrested, MHA said.

4. Links to other terror groups

- Some of the PFI's founding members are the leaders of Students Islamic Movement of India (Simi) and PFI has linkages with Jamat-ul-Mujahideen Bangladesh (JMB), both of which are proscribed organisations, MHA said. Its links with global terrorist groups like Isis have also emerged.

5. Threat to internal security

- The PFI shows sheer disrespect towards the constitutional authority of India, and with funds and ideological support from outside, it has become a major threat to internal security, the notification said.
- However it did not name any country from where the PFI purportedly received support or funds.

6. Involvement in violent acts

- Probes have revealed involvement of PFI functionaries in acts like cold blooded killings, chopping off body parts and obtaining explosives to target prominent people or public property.
- Sole objective of such activities was disturbing public peace and tranquility, the notification said. The MHA cites several murders in Kerala, Tamil Nadu and Karnataka in which PFI men were allegedly involved.

7. Major incidents blamed on PFI

- PFI cadres were accused of chopping the palm of a Kerala college professor in 2010 for 'including a controversial question' in an examination paper.
- They were also accused in the murders of Sanjith (Kerala, November, 2021), V Ramalingam, (Tamil Nadu, 2019), Nandu, (Kerala, 2021), Abhimanyu (Kerala, 2018), Bibin (Kerala, 2017), Sharath (Karnataka, 2017), R.Rudresh (Karnataka, 2016), Praveen Pujari (Karnataka, 2016), Sasi Kumar (Tamil Nadu, 2016) and Praveen Nettaru (Karnataka, 2022).

8. Dubious funding

- PFI had been raising funds from within India and abroad through banking channels, hawala and donations, as part of a well-crafted criminal conspiracy and then transferring, layering and integrating these funds through multiple accounts to project them as legitimate.
- The funds were eventually used to carry out various criminal, unlawful and terrorist activities in India, MHA said.
- The sources of deposits on behalf of PFI with respect to its several bank accounts were not supported by the financial profiles of the account holders, it said.

9. Affiliates as fund collectors

- PFI has created several fronts with the objective of enhancing its reach among different sections of the society such as youth, students, women, Imams, lawyers or weaker sections. The intent is to expand membership, enhancing influence and fund raising capacity, MHA said.
- The fronts have a 'hub and spoke' relationship with the PFI acting as hub and utilizing the mass outreach and fund raising capacity of its affiliates for strengthening its capability for unlawful activities. These fronts function as 'roots and capillaries' through which the PFI is fed and strengthened, the Centre further said.

PFI: A bit of history



- Founded in Nov 2006 through the merger of three Muslim organisations in southern India
- Initially headquartered in Kozhikode, it later shifted base to Delhi
- Describes itself as an 'Indian social movement working for total empowerment of marginalized sections'
- 'PFI a resurrection of the banned Simi in another form': Kerala govt to HC in 2012

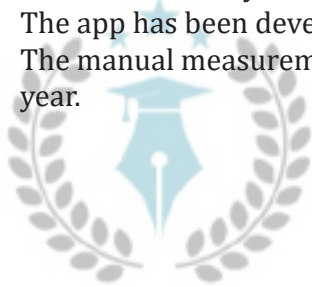
Jaldoot app

Why in News

Centre launches Jaldoot app to capture groundwater levels across the country

Important Points

- The union ministry of state for rural development and steel on Tuesday launched a dedicated JALDOOT App and its e-brochure which aims to centralise the data on groundwater levels across the country.
- Officers, named Jaldoots, have been assigned to conduct measurements of open wells in every village twice a year.
- Despite promoting watershed development, afforestation, waterbody development and renovation, rainwater harvesting like initiatives, the groundwater level in various parts of the country has deplete, this app will facilitate in observing water tables across the country and the resulting data can be utilised for Gram Panchayat Development Plan and Mahatma Gandhi NREGA Plans.
- Jaldoots will manually measure the water levels in 2-3 wells in each village and upload geo-tagged images on the app, the ministry said, adding that this app will work in both online and offline modes and the data stored on mobile will synchronise with the app whenever it comes into the connectivity area.
- The ministry added that the JALDOOT website has reports on water level, monsoon and registered users.
- The data entered by Jaldoots will be integrated with the Nation Water Informatics Centre (NWIC) database for analysis and benefit of various stakeholders.
- The app has been developed by Union rural development and Panchayati Raj ministries.
- The manual measurement of water levels will take place from May 1 to 31 and October 1 to 31 every year.



TRANSFORM IAS
Transforming Lives with Education

Chapter- 7

INTERNATIONAL RELATION

Biodiversity conservation

Why in News

Cabinet gives nod to MoU with Nepal on biodiversity conservation

Important Points

- The Union Cabinet, chaired by Prime Minister Narendra Modi, has approved the signing of a Memorandum of Understanding (MoU) between India and Nepal in the field of biodiversity conservation, to promote cooperation between the two countries in the field of forests, wildlife, environment, and climate change.
- According to the release, the MoU would help in promoting cooperation between the parties in the field of forests, wildlife, environment, biodiversity conservation, and climate change, including restoration of corridors and interlinking areas and sharing knowledge and best practices.
- India is one of the 17 mega-diverse countries in the world and it is taking several steps to conserve the wildlife population and biodiversity.
- The Indian government has adopted many laws, policy initiatives, and acts to conserve the vast flora and fauna in the country and across the borders adjoining neighbouring countries.
- A transboundary protected area is an ecological protected area that spans the boundaries of more than one country or sub-national entity.

India shares TPA with Nepal on

- Kanchenjunga Conservation Area (KCA)
- Terai Arc landscape
- Sacred Himalayan Landscape (Nepa, Sikkim, Bhutan)

India and Japan

Why in News

India and Japan Hold 2+2 Ministerial Dialogue

Important Points

- India-Japan relations have grown from strength to strength in the last decade, with significant personal drive and commitment from the top leadership in both Tokyo and New Delhi.
- The two countries held their 2+2 Ministerial Dialogue in Tokyo for which both India's External Affairs Minister Dr. S Jaishankar and Defense Minister Rajnath Singh traveled to Japan.
- Late Japanese Prime Minister Abe Shinzo was a driving force in nurturing the India-Japan relationship, but it appears that relationship is set to continue with the same vigor under Prime Minister Kishida Fumio as well.
- The 2+2 Ministerial Dialogue is a reflection of the commitment from both sides to keep up the momentum in the India-Japan relationship.
- The rapidly changing nature of threats in the Indo-Pacific, including the strategic consequences of China's rise, are added imperatives to further this momentum.
- Both countries are increasingly wary of China's growing military might.
- Both sides denounced the use of force in settling disputes.
- The dispute between Japan and China lies in China's claims to almost all the energy-rich waters of the South China Sea, where it has established military outposts on artificial islands.
- The point of conflict lie in the the East China Sea, where China claims a group of uninhabited Japanese-administered islets.

- India, which last week commissioned its first home-built aircraft carrier, is involved in a standoff with Chinese forces on their remote Himalayan border.
- Japan and India, along with Australia and the United States, are members of the Quad group of countries that hold annual naval exercises across the Indo-Pacific region to demonstrate interoperability.
- Exercises: Fighter Exercises (Air force); Dharma Guardian (Joint Military Exercise); JIMEX (Navy) and Malabar (India-US-Japan-Australia maritime exercise)
- India has the '2+2' ministerial format of dialogue with very few countries including the US, Japan, Australia and Russia.



SETU

Why in News

Government launches initiative to connect Indian startups with US investors

Important Points

- Commerce and industry minister has launched an initiative -- SETU (Supporting Entrepreneurs in Transformation and Upskilling) -- here to connect startups in India to US-based investors.
- SETU is designed to break the geographical barriers between mentors based in the US that are willing to invest in entrepreneurship and sunrise startups in India.
- The programme was launched during an interaction focused on specific issues related to the startup ecosystem in India.
- The meeting focused on ways to encourage domestic incorporation and mentorship of early-stage Indian startups by successful diaspora members in the Bay Area of San Francisco.
- The initiative would connect startups in India to US-based investors and startup ecosystem leaders with mentorship and assistance in various areas, including funding, market access and commertups in India.
- The interaction between the stakeholders will be supported through the mentorship portal under the Startup India initiative MAARG (Mentorship, Advisory, Assistance, Resilience, and Growth) programme, which is a single-stop solution finder for startups in India.
- MAARG is inviting applications from mentors across the world. Till date, over 200 mentors have been on-boarded on MAARG across the globe.
- MAARG is a single-stop solutions finder for startups in India



India-Bangladesh

Why in News

A memorandum of understanding (MoU) was signed on sharing of the waters of the Kushiara river (distributary of the Barak river) which flows through Assam, and then on to Bangladesh.

Important Points

- For the first time in 26 years, India and Bangladesh agreed to share the waters of a significant trans-boundary river, the Kushiara, while negotiations over a long-delayed agreement to share the Teesta River's waters, which are politically sensitive for Bangladesh Prime Minister Sheikh Hasina, are still ongoing.

What is the Kushiara agreement?

- Under the agreement, Bangladesh will be able to withdraw 153 cusecs (cubic feet per second) of water from the Kushiara which will solve the water crisis for farmers of Sylhet.
- The water of Kushiara will be channelled through the Rahimpur Canal project in Sylhet.
- Rahimpur canal is the only supplier of water from the Kushiara to the region.

Water dispute between India and Bangladesh

- The Teesta River dispute and the Ganges River dispute are the two main long-standing water conflicts between India and Bangladesh. Both rivers are important supplies of water for fishermen, farmers, and boatmen in both nation.
- Since the sacred river flows from India to Bangladesh, the Ganga river dispute has been a source of contention between the two countries for the past 35 years. There hasn't been a long-term solution for sharing water offered despite several rounds of bilateral negotiations failing.
- In order to establish a water sharing arrangement for the following 30 years, a treaty was signed between Indian Prime Minister HD Deve Gowda and Bangladeshi counterpart Sheikh Hasina in 1996. This deal is about to expire.
- The Teesta water-sharing disagreement between the two countries, which has been a source of hostility between India and Bangladesh since 1986, has not yet been resolved by signing a treaty.



Abraham Accords

Why in News

The Abraham Accords two years on: from ambition to reality

Important Points

- Two years ago, Israel, the United Arab Emirates and Bahrain signed the United States-brokered Abraham Accords.
- It was a historic moment for the peoples and nations, fostering new hope for peace and prosperity in the Middle East. It also brought exciting opportunities for India and its thriving business community, which enjoys strong relations and engagement with countries.

What is Abraham Accord?

- Brokered by the USA, Abraham Accord is a normalization agreement between UAE and Israel to establish formal diplomatic relations, later joined by Bahrain, Sudan, and Morocco and in exchange Israel would suspend its plans to annex parts of the occupied West Bank, thereby becoming the first Gulf country to establish diplomatic and economic relations with Israel.
- UAE becomes the third Arab nation to recognize Israel after Egypt (in 1979) and Jordan (1994)
- The Abraham Accords were a product of collaboration between nations towards normalisation of ties, bringing Israel closer to the Gulf nations that shared common values and mutual interests, and taking forward the peace initiative.
- As world mark the second anniversary of the signing of the Abraham Accords, the benefits of this peace continue to grow.



- Increasingly, Abraham Accords are seeing deepening people-to-people ties and business opportunities.
- New joint ventures are being undertaken in critical sectors such as clean energy, health, innovation, technology, agriculture, water, trade, tourism, sustainability and much more.
- Countries have also worked to produce academic collaborations between universities, promote cultural exchange in the arts field, and raise awareness about shared histories and heritage.
- Ultimately, Abraham Accords aim to further strengthen the mutual understanding and the close friendship between peoples.

- The boost to regional connectivity has also benefited the people of India. The thriving Indian diaspora throughout the Gulf can now fly directly from the UAE to Israel or from Israel to Bahrain.
- Indian students are travelling back and forth, obtaining easier access to universities, and exploring international study programmes.
- The Accords have paved the way for greater regional and multinational cooperation. Expanding economic opportunities continue to reach India, and have already seen major commercial collaborations between companies from the UAE, Israel, Bahrain and the United States with the Indian private sector.
- One concrete example of high-level economic cooperation between governments is the formation of the I2U2 Group, established by Israel, India, the UAE, and the United States.
- First made possible by the Abraham Accords, the I2U2 Group will focus on joint investments in water, energy, transportation, space, health, and food security.
- Through two key projects in India, I2U2 partners will mobilise private sector capital and expertise to help modernise infrastructure, decarbonise industries, improve public health, and promote the development of green technologies.
- In turn, these projects will also greatly benefit the people of India. I2U2 combines the strengths and resources of each member country to find innovative solutions to pressing global challenges and will serve as a model for multilateral cooperation with other like-minded countries.
- In efforts to build upon the success of the Accords, United States, Israel, the UAE, and Bahrain — alongside India — will continue to prioritise the greatest benefit to the people and ensure lasting impact for generations to come.

Varanasi

Why in News

Varanasi nominated as the first-ever SCO Tourism and Cultural Capital at the 2022 SCO Summit

Important Points

- The city of Varanasi has been nominated as the first-ever SCO Tourism and Cultural Capital during the period 2022-2023 at the 22nd Meeting of Shanghai Cooperation Organization (SCO) Council of Heads of State in Samarkand, Uzbekistan.
- The nomination of Varanasi as the first ever SCO Tourism and Cultural Capital will promote tourism, cultural and humanitarian exchanges between India and the SCO member Countries.
- It also underlines India's ancient civilizational links with Member States of SCO, especially the Central Asian Republics.
- Under the framework of this major cultural outreach programme, a number of events will be hosted in Varanasi during 2022-23, for which guests will be invited to participate from the SCO member states.
- These events are expected to attract Indologists, scholars, authors, musicians and artists, photojournalists, travel bloggers, and other invited guests.

About SCO

- The Shanghai Cooperation Organization (SCO) is a permanent intergovernmental international organization, the establishment of which was announced on June 15, 2001 in Shanghai by the Republic of Kazakhstan, the People's Republic of China, the Kyrgyz Republic, the Russian Federation, the Republic of Tajikistan, the Republic of Uzbekistan.
- It was preceded by the mechanism of the Shanghai Five.
- In June 2002, the Charter of the Shanghai Cooperation Organization was signed at a meeting of the Council of Heads of State in St. Petersburg, on September 19, 2003 entered into force.
- This is a basic statutory document that fixes the goals and principles of the organization, its structure and main activities.
- On June 8-9, 2017, Astana hosted a historic meeting of the Council of Heads of States of the Shanghai Cooperation Organization, during which the status of a member State of the Organization was granted to the Republic of India and the Islamic Republic of Pakistan.

- A recent summit of the Shanghai Cooperation Organization (SCO) 2022 was held in Samarkand, Uzbekistan.
- The member nations signed the Samarkand Declaration.
- India assumes the SCO Presidency in 2023.

There are 9 Member States:

- China
- India
- Kazakhstan
- Kyrgyzstan
- Russia
- Pakistan
- Tajikistan
- Uzbekistan
- Iran

There are 3 Observer States interested in acceding to full membership:

- Afghanistan
- Belarus
- Mongolia

SCO's Main Goals are as follows:

- Strengthening mutual confidence and good-neighbourly relations among the member countries.
- To promoting effective cooperation in politics, trade and economy, science and technology, culture as well as education, energy, transportation, tourism, environmental protection and other fields.
- Making joint efforts to maintain and ensure peace, security and stability in the region, moving towards the establishment of a new, democratic, just and rational political and economic international order.
- Its internal policy based on the principles of mutual trust, mutual benefit, equal rights, consultations, respect for the diversity of cultures and aspiration towards common development.
- Its external policy is conducted in accordance with the principles of non-alignment, non-targeting anyone and openness.

Eastern Economic Forum (EEF)**Why in News**

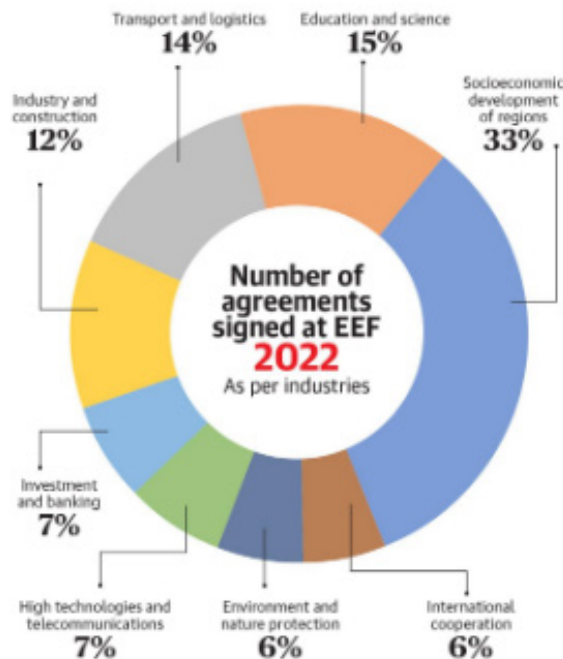
The Eastern Economic Forum and India's balancing act

Important Points

- Russia hosted the seventh Eastern Economic Forum (EEF) Vladivostok. The four-day forum is a platform for entrepreneurs to expand their businesses into Russia's Far East (RFE).

What is the Eastern Economic Forum?

- The EEF was established in 2015 to encourage foreign investments in the RFE.
- The EEF displays the economic potential, suitable business conditions and investment opportunities in the region.
-
- Agreements signed at the EEF increased from 217 in 2017 to 380 agreements in 2021, worth 3.6 trillion roubles.
- As of 2022, almost 2,729 investment projects are being planned in the region.
- The agreements focus on infrastructure, transportation projects, mineral excavations, construction, industry and agriculture.



Who are the major actors in the Forum? What are their interests?

- This year, the Forum aimed at connecting the Far East with the Asia Pacific region.

China

- China is the biggest investor in the region as it sees potential in promoting the Chinese Belt and Road Initiative and the Polar Sea Route in the RFE.
- China's investments in the region account for 90% of the total investments.
- Russia has been welcoming Chinese investments since 2015; more now than ever due to the economic pressures caused by the invasion in Ukraine.
- The Trans-Siberian Railway has further helped Russia and China in advancing trade ties.
- The countries share a 4000-kilometer-long border, which enables them to tap into each other's resources with some infrastructural assistance.
- China is also looking to develop its Heilongjiang province which connects with the RFE.
- China and Russia have invested in a fund to develop northeastern China and the RFE, through collaborations on connecting the cities of Blagoveshchensk and Heihe via a 1,080 metre bridge, supplying natural gas, and a rail bridge connecting the cities of Nizhneleninskoye and Tongjiang.

South Korea

- South Korea has invested in shipbuilding projects, manufacturing of electrical equipment, gas-liquefying plants, agricultural production and fisheries.
- In 2017, the Export-Import Bank of Korea and the Far East Development Fund announced their intention to inject \$2 billion in the RFE in a span of three years.

Japan

- In 2017, Japanese investments through 21 projects amounted to \$16 billion. Under Shinzo Abe's leadership, Japan identified eight areas of economic cooperation and pushed private businesses to invest in the development of the RFE.
- Japan seeks to depend on Russian oil and gas resources after the 2011 meltdown in Fukushima which led the government to pull out of nuclear energy.
- Japan also sees a market for its agro-technologies which have the potential to flourish in the RFE, given similar climatic conditions.
- The trade ties between Japan and Russia are hindered by the Kuril Islands dispute as they are claimed by both countries.

India

- India seeks to expand its influence in the RFE.
- During the forum, Prime Minister Narendra Modi expressed the country's readiness in expanding trade, connectivity and investments in Russia.
- India is keen to deepen its cooperation in energy, pharmaceuticals, maritime connectivity, healthcare, tourism, the diamond industry and the Arctic.
- In 2019, India also offered a \$1 billion line of credit to develop infrastructure in the region.
- Through the EEF, India aims to establish a strong inter-state interaction with Russia.
- Business representatives of Gujarat and the Republic of Sakha have launched agreements in the diamond and pharmaceuticals industry.

What does the EEF aim for?

- The primary objective of the EEF is to increase the Foreign Direct Investments in the RFE.
- The region encompasses one-third of Russia's territory and is rich with natural resources such as fish, oil, natural gas, wood, diamonds and other minerals.
- The sparse population living in the region is another factor for encouraging people to move and work in the Far East.
- The region's riches and resources contribute to five per cent of Russia's GDP. But despite the abundance and availability of materials, procuring and supplying them is an issue due to the unavailability of personnel.
- The RFE is geographically placed at a strategic location; acting as a gateway into Asia.
- The Russian government has strategically developed the region with the aim of connecting Russia to the Asian trading routes.
- With the fast modernisation of cities like Vladivostok, Khabarovsk, Ulan-Ude, Chita and more, the government aims to attract more investments in the region.
- Russia is trying to attract the Asian economies in investing and developing the far east.
- Although, the EEF is an annual gathering, the forum comes at an opportune time for Russia who is dealing with the impact of the sanctions.
- Moreover, the coming together of countries like Myanmar, Armenia, Russia, and China seems like the forming of an anti-sanctions group in the international order.

Will India be able to achieve a balance between the EEF and the Indo-Pacific Economic Framework for Prosperity (IPEF)?

- The U.S.-led Indo-Pacific Economic Framework for Prosperity (IPEF) and the EEF are incomparable based on its geographic coverage and the partnership with the host-countries.
- India has vested interests in both the forums and has worked towards balancing its involvement. India has not shied away from investing in the Russia-initiated EEF despite the current international conditions.
- At the same time, India has given its confirmation and acceptance to three of the four pillars in the IPEF.
- The country understands the benefits of being involved in the development in the RFE but it also perceives the IPEF as a vital platform to strengthen its presence in the Indo-Pacific region.
- The IPEF also presents an ideal opportunity for India to act in the region, without being part of the China-led Regional Comprehensive Economic Partnership or other regional grouping like the Comprehensive and Progressive Agreement for Trans-Pacific Partnership.
- The IPEF will also play a key role in building resilient supply chains. India's participation in the forum will help in disengaging from supply chains that are dependent on China and will also make it a part of the global supply chain network.
- Additionally, the IPEF partners will act as new sources of raw material and other essential products, further reducing India's reliance on China for raw materials.

Indo-Pacific Trilateral Development Cooperation Fund

Why in News

India, France to establish Indo-Pacific Trilateral Development Fund to support innovators, start-ups

Important Points

- India and France agreed to set up an Indo-Pacific trilateral framework to roll out development projects, decided to expand strategic cooperation and vowed to work closely to deal with pressing global challenges such as food crisis triggered by the Ukraine war.
- Referring to the Indo-Pacific many challenges have emerged because of China and both France and India share the same concerns.
- India and France also decided to expand cooperation in the Indo-Pacific under separate trilaterals with Australia and the United Arab Emirates.
- France and India have always supported each other such a level of solidarity and trust is “rare and precious” in today’s world.
- On dealing with the global food crisis, France and India indicated that an initiative could be proposed at the upcoming G20 summit in Indonesia to ensure that the most vulnerable countries “don’t remain too exposed to these food security issues.”
- Partnership for the Indo-Pacific and a rules-based international order” as one of the three key initiatives agreed by the two ministers.
- The two sides agreed to work towards the establishment of an Indo-Pacific Trilateral Development Cooperation Fund that will support sustainable innovative solutions for countries in the region.
- Both the country decided to resume cooperation under the India-France-Australia Trilateral mechanism.
- The other two initiatives are: partnership for the planet and sustainable development, and cultural and people-to-people ties.
- India will be the first “country of honour” at the Sea Tech Week in Brest, France, a major international event bringing together blue economy stakeholders.
- France also welcomed the inaugural meeting of the Focal Points of the India-France-UAE trilateral framework and urged the officials to prepare an agreed roadmap for cooperation.
- The Indo-Pacific trilateral would also provide a platform for Indian innovations and start-ups to demonstrate their relevance to the requirements of other societies.
- Both countries welcomed the launch of India’s Unified Payment Interface (UPI) in France.
- On defence industry cooperation, India welcomed the Safran Group’s decision to set up their largest and first aircraft engine MRO (maintenance, repair, and overhaul) facility in Hyderabad.
- The facility will be set up with an investment of Rs 1200 crore (USD 150 million) and is expected to create about 1,000 high-skilled jobs in Telangana.
- France announced its support for Prime Minister Modi’s Lifestyle for the Environment (LIFE) initiative, and will seek to work with India on promoting sustainable lifestyles to fight climate change.

Chapter- 8

GOVERNMENT SCHEME

Surrogate Advertising

Why in News

Centre has directed advertising agencies to ensure strict compliance with the guidelines on surrogate advertisements.

Important Points

- Ministry of Consumer Affairs, Food & Public Distribution directs advertising agencies to ensure strict compliance of guidelines on surrogate advertisements.
- The department of consumer affairs, has directed industry bodies CII, Ficci, Assocham and those related to advertising and broadcasting to ensure strict compliance of the existing guidelines for the prevention of misleading advertisement especially the provisions pertaining to surrogate advertisements.
- The guidelines stated that no surrogate advertisements or indirect advertisements shall be made for goods or services whose advertising is otherwise prohibited or restricted by law.
- The ministry warns the advertisers' associations that failures to ensure compliance of the guidelines by the concerned authorities would lead to the central consumer protection authority (CCPA) taking the reins and take suitable stern action against the violators.
- As per reports, the guidelines are applicable to manufacturers, service providers or traders whose goods, products or service is the subject of an advertisement of an advertisement, or to an advertising agency or endorser whose service is availed for the advertisement of such goods, product or service regardless of the form, format or medium of the advertisement.
- The guidelines clearly state that no surrogate advertisement or indirect advertisement shall be made for goods or services whose advertising is otherwise prohibited or restricted by law, by circumventing such prohibition or restriction and portraying it to be an advertisement for other goods or services, the advertising of which is not prohibited or restricted by law.
- The Department also cautioned the advertisers' associations that failure to ensure strict compliance of the guidelines by the concerned parties would lead to the CCPA taking the reins and take suitable stern action against the violators.

PM-SHRI Yojana

Why in News

On the occasion of Teacher's Day, the Prime Minister has announced the development and upgradation of 14,500 schools across India under the Pradhan Mantri Schools For Rising India (PM-SHRI) Yojana.

Important Points

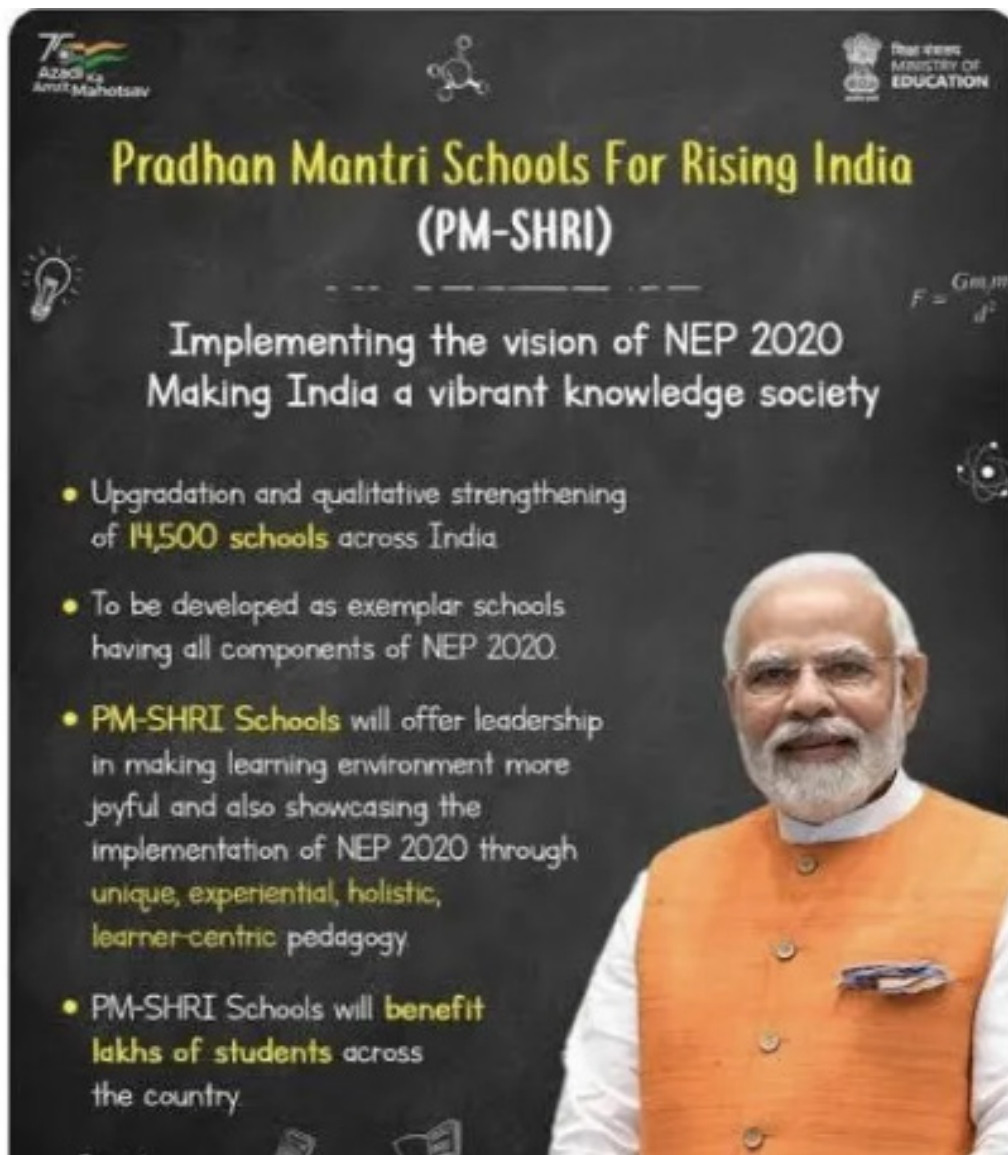
- The PM-SHRI schools will have a modern, transformational and holistic method of imparting education.
- Shri Modi said that he is certain that the PM-SHRI schools will further benefit lakhs of students across India in the spirit of NEP.
- The PM-SHRI schools will have a modern, transformational and holistic method of imparting education.
- Emphasis will be on a discovery oriented, learning centric way of teaching.
- Focus will also be on modern infra including latest technology, smart classrooms, sports and more.

PM SHRI schools:

- The Centre has not yet released the list of schools that have been chosen for this purpose though it

has been announced that the PM SHRI schools will also “offer mentorship” to other schools in their vicinity.

- These schools will be equipped with modern infrastructure including labs, smart classrooms, libraries, sports equipment, art room etc.
- It shall also be developed as green schools with water conservation, waste recycling, energy-efficient infrastructure and integration of organic lifestyle in curriculum.



Features of NEP in school education

- At school-level education, NEP did away with the archaic 10+2 structure and introduced a new pedagogical and curricular structure of 5+3+3+4 which covers students of ages 3-18 years.
- It has been divided into four stages of learning:- Foundational, Preparatory, Middle, and Secondary.
- The new policy caters to 3-6-year-old children as well and promotes Early Childhood Care and Education (ECCE).
- Under this, NCERT will formulate a National Curricular and Pedagogical Framework for Early Childhood Care and Education (NCPFECCE).
- It will be divided into two parts which will entail a sub-framework for 0-3 year-olds and a sub-framework for 3-8 year-olds.
- The ECCE will help children to learn a diverse range of things like art, music, craft, drama, puppetry, etc., to plant the seeds of creative instincts and logical thinking in them from an early age.
- At the preparatory level (III-V), light textbooks are to be introduced along with some formal classroom teaching. Subject teachers are to be introduced at the middle level (VI-VIII).
- The secondary stage (IX-XII) will be multidisciplinary in nature with no hard separation between arts and sciences or other disciplines.

Kirit Parikh Committee

Why in News

The Ministry of Petroleum and Natural Gas has set up a committee to review the current gas pricing formula.

Important Points

- Amid rising concerns over skyrocketing global natural gas prices jacking up energy and industrial costs, and derailing the efforts to contain inflation, the Centre has begun a review of the pricing formula for domestically-produced gas.
- The Ministry of Petroleum and Natural Gas has set up a committee under noted energy expert Kirit Parikh to review the current gas pricing formula, Reuters reported, adding that the government order in this regard spoke of the need to ensure “a fair price to the end consumer”.
- The panel, which will include representatives of the gas producers association as also producers ONGC and OIL. It also has a member from private city gas operators, state gas utility GAIL, a representative of Indian Oil Corporation (IOC) and a member from the fertiliser ministry
- Though the committee has been asked to submit the report by the end of this month, its inputs won't be used for the next six monthly revision of the domestic gas prices for the October 2022-March 2023 period.
- The next price revision will likely lead to a further rise in prices of gas from both the normal and the “difficult” fields, given that the benchmark global prices have remained elevated.
- In the last revision effective April 1, 2022, the price of natural gas from old and regulated fields was doubled to \$6.1 per million British thermal unit (mBtu).
- Price of gas produced from difficult fields like KG-D6 block operated by Reliance Industries-bp combine, was hiked from \$6.13 earlier to 9.92/mBtu for the April-September 2022 period.
- Notably, the review of gas pricing formula taking consumer interests into consideration comes despite Reliance Industries repeatedly urging the Centre to remove the cap on gas price as it “remains disconnected with the global price trends, irrespective of any rise or a fall”.
- Of natural gas consumed in India, almost 50 per cent is imported LNG.
- The panel has been asked to recommend a fair price to end-consumers and also suggest a “market-oriented, transparent and reliable pricing regime for India's long-term vision for ensuring a gas-based economy”.
- The flagship scheme of the government Pradhan Mantri Ujjwala Yojana (PMUY) has made a significant contribution to enhancing the penetration of LPG, especially in rural areas.
- The renewed targets under the Pradhan Mantri Ujjwala Yojana (PMUY) aim to provide LPG connections to 10 crore households before January 31, 2022.
- Gas is an input for making fertiliser as well as power. It is also converted into CNG and piped to household kitchens and a rise in its prices fuelled inflation.

Dharamshala Declaration

Why in News

Dharamshala Declaration affirms to make India global leader in tourism sector by 2047

Important Points

- The three-day National Conference of State Tourism Minister ended with the adoption of the “Dharamshala Declaration”.
- It affirms commitment toward developing “sustainable and responsible tourism” and positions India as a “global leader in the tourism sector by 2047”.
- The document titled Dharamshala Declaration-2020: Sustainable and Responsible Tourism asserts that India will play a pivotal role in contributing toward global tourism recovery driven mainly through domestic tourism.
- All the major indices of tourism have started showing signs of recovery toward the pre-pandemic levels such as domestic air passenger traffic, hotel occupancy and tourist footfalls.
- It also says that the National Tourism Policy has been drafted with a holistic vision and strategy to revive India's tourism and targets to achieve USD 1 Trillion by the sector in 2047.

- Against this backdrop, the Government of India is also paving way for the development of sustainable and responsible tourism destinations.
- The government will continue to support MSMEs in the tourism sector and capitalize on the employment generating potential of the industry.

Showcase cultural richness

- The Dharamshala Declaration also affirms the plan to position India as a major tourism destination during its presidency of G-20 next year.
- It announces to bring in necessary interventions including visa reforms, ease of travel, travel-friendly immigration facilities at airports and openness to international travel.
- Apart from it, the document talks about the short-term and long-term goals in the tourism sector.

Position India as global leader in tourism by 2047

- In short term, the Indian tourism industry will strive to recover to pre-pandemic levels by mid-2024.
- The country is estimated to achieve USD 150 billion GDP contribution, USD 30 billion foreign exchange earnings and 15 million foreign tourist arrivals by that period.
- In the medium term, that is 2030, the Indian economy is expected to grow at 7-9% and tourism-related goals are USD 250 billion GDP contribution; 137 million jobs, 56 million foreign tourist arrivals and USD 56 billion in foreign exchange earnings.

“CM da Haisi”

Why in News

Manipur CM launches portal to address public grievances

Important Points

- Manipur Chief Minister N Biren Singh has launched a web portal to enable people to redress their grievances, and provide a platform to raise corruption-related issues.
- Three phone numbers, including two meant for the anti-corruption cell, have been made available on the portal ‘CM da Haisi’ (Let’s inform the CM).
- It will enable fast redressal of public grievances and also provide a platform to raise corruption-related issues.
- This will further enable us to bring transparency and accountability in governance and delivery of public services.



The advertisement features a blue background with a portrait of Shri N. Biren Singh, CM of Manipur, on the right. On the left, the text reads: 'CM DA HAISI' in large bold letters, followed by 'A Mega Citizen Engagement Initiative for people of Manipur to directly connect with the CM'. Below this, a phone icon is next to the word 'CALL', followed by the number '95347 95347' in large bold font, and 'And Share Your Suggestions.' in smaller text. At the bottom, a quote from the CM is displayed: '“Freely share your problems directly with me or give suggestions for better functioning of the government, and it is the Governments responsibility and my commitment to resolve them at the earliest”.' The name 'Shri N. Biren Singh CM, Manipur' is written at the bottom right.

Loktak Lake

- Loktak Lake is the largest natural freshwater lake in the north-eastern region of India and has been designated as a wetland of International Importance under the Ramsar Convention in 1990.

The Inner Line Permit

- Inner Line Permit (ILP) is an official travel document issued by the Government of India to allow inward travel of an Indian citizen into a protected area for a limited period.
- It is obligatory for Indian citizens from outside those states to obtain a permit for entering into the protected state. The document is an effort by the government to regulate movement to certain areas located near the international border of India.
- This is an offshoot of the Bengal Eastern Frontier Regulations, 1873, which protected Crown's interest in the tea, oil and elephant trade by prohibiting "British subjects" from entering into these "Protected Areas" (to prevent them from establishing any commercial venture that could rival the Crown's agents).
- The word "British subjects" was replaced by Citizen of India in 1950. Despite the fact that the ILP was originally created by the British to safeguard their commercial interests, it continues to be used in India, officially to protect tribal cultures in northeastern India.
- There are different kinds of ILP's, one for tourists and others for people who intend to stay for long-term periods, often for employment purposes.
- Manipur is the fourth state to implement the ILP, after Arunachal Pradesh, Nagaland, and Mizoram.

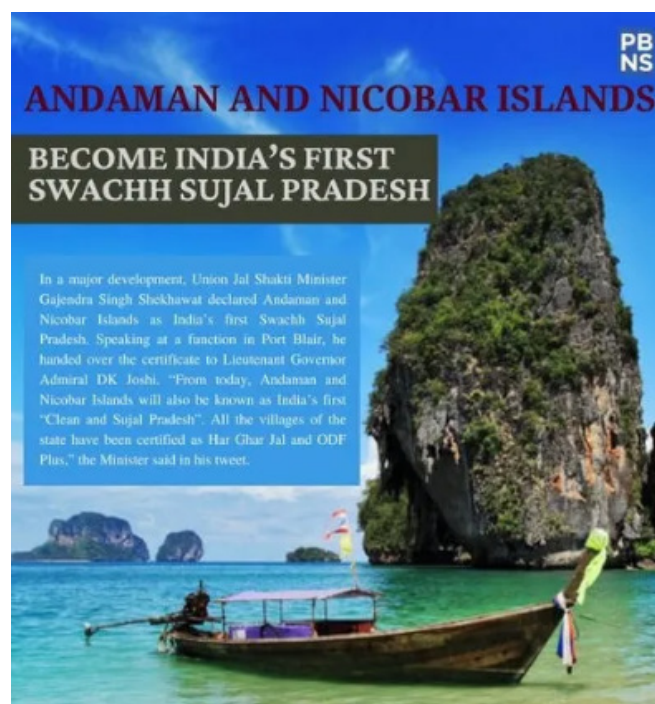
Swachh Sujal Pradesh

Why in News

Andaman and Nicobar Islands declared India's first Swachh Sujal Pradesh

Important Points

- Union Jal Shakti Minister has declared Andaman and Nicobar Islands as India's first Swachh Sujal Pradesh. He handed over the certificate to Lieutenant Governor Admiral DK Joshi.
- Now, all villages of Andaman and Nicobar Island have been certified as Har Ghar Jal and verified as open defecation free - ODF plus.
- Jal Shakti Ministry congratulated all the islanders for this major achievement and highlighted people participation to complete this journey.
- There are 266 villages and 62,000 rural households and 9 blocks distributed among the 3 districts.
- The Union territory made sure that all the 368 schools, 558 Anganwadi centres, and 292 public institution centres received piped water.



- In A&N Islands, there is only one urban sector i.e. Port Blair Municipal Council while the rest comes under the rural sector. In the urban sector, the ODF++ target was achieved in 2021.
- For A&N Islands to be declared as '1st Swachh Sujal Pradesh', the Ministry has carried out a comprehensive verification during which all important parameters viz. quality of water, the quantity of water supply, regularity of water supply were thoroughly verified, after which only, the Ministry gave the Certificate.
- FSTC (Functional Household Tap Connection) facility has been made available in all the villages, and 100% Har Ghar Jal certifications have been achieved through the support of Gram Sabhas.
- In order to have effective Solid Liquid Waste management, the UT has taken measures to set up 26 Solid Waste Management Clusters which would cater to the entire 70 Gram Panchayats of Andaman.

The certification is provided for ensuring 3 things:

- Safe and secure drinking water supply,
- ODF Plus status,
- Awareness about cleanliness and convergence of schemes.

PM-PRANAM scheme

Why in News

PM PRANAM planned to reduce the use of chemical fertilisers by incentivising states.

Important Points

- In order to reduce the use of chemical fertilisers by incentivising states, the Union government plans to introduce a new scheme – PM PRANAM. It is an initiative that encourages a balanced use of fertilisers with bio-fertilisers and organic fertilisers as alternative forms of nutrients.
- The idea of the PM PRANAM Scheme was proposed during the National Conference on Agriculture for Rabi Campaign.
- PM PRANAM – Promotion of Alternate Nutrients for Agriculture Management Yojana

Implementation– The idea of the scheme has been initiated by the Union Ministry of Chemicals and Fertilizers.

Objectives of PM PRANAM Scheme

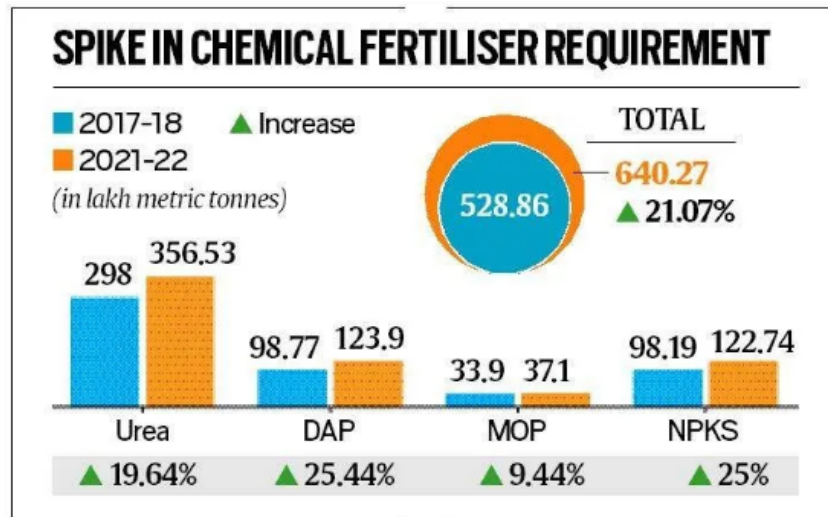
- To encourage the balanced use of fertilisers in conjunction with biofertilisers and organic fertilisers.

Aim of PM PRANAM Scheme

- To reduce the subsidy burden on chemical fertilizers which are expected to increase to Rs.2.25 lakh crore in 2022-23 while, the previous year figure of Rs. 1.62 lakh crore which are about 39% to jump more fertilizer subsidy
- Reduce the use of chemical fertilizer for which government's focus on the promoting the balance use of fertilizers or alternative fertilizers.

Features of PM PRANAM Scheme

- The scheme will have no separate budget and will be financed through the "savings of existing fertiliser subsidy" under schemes run by the Department of Fertilizers.
- 50% of subsidy savings will be passed on as a grant to the state that saves the money.
- 70% of the grant provided under the scheme can be used for asset creation related to the technological adoption of alternate fertilisers and alternate fertiliser production units at the village, block and district levels.
- The remaining 30% grant money can be used for rewarding and encouraging farmers, panchayats, farmer producer organisations and self-help groups that are involved in the reduction of fertiliser use and awareness generation.
- The calculation of reducing chemical fertiliser use of urea in a year will be compared to the average consumption of urea during the last three years.
- For this purpose, data available on a Fertilizer Ministry dashboard, IFMS (Integrated Fertilizers Management System) will be used.



How will it work?

- **Average consumption:** The government aims to determine the state's use of chemical fertilisers by calculating and comparing the usage in a given year to its average usage in the last three years.
- **Data:** For this, the data available on the Fertilizer Ministry dashboard, Integrated Fertilizers Management System (IFMS), will be taken.
- **Finance mechanism:** The scheme will not have a separate budget and will be financed by the "savings of existing fertiliser subsidy" under schemes run by the Department of fertilisers.

Need for PM PRANAM Scheme?

- **Subsidy Burden on Government:** Farmers buy fertilisers at Maximum Retail Prices (MRP) below their normal supply-and-demand-based market rates or what it costs to produce/import them.
- For example, the MRP of neem-coated urea is fixed by the government at Rs. 5,922.22 per tonne, whereas its average cost-plus price payable to domestic manufacturers and importers comes to around Rs. 17,000 and Rs. 23,000 per tonne, respectively.

Fertilizer subsidy in India

- **Expenditure:** India's expenditure on fertilizer subsidy was Rs. 1.27 lakh crore in 2020-21. In the Union Budget 2021-22, the estimated amount was Rs. 79,530 crore, which increased to Rs. 1.40 lakh crore in the revised estimates (RE). The final fertilizer subsidy reached Rs 1.62 lakh crore in 2021-22.
- The government has allocated Rs. 1.05 lakh crore for subsidies in 2022-23. There are chances that figures could cross Rs. 2.25 lakh crore during this year.

Fertilizer Sector Reforms

- **Plugging leaks:** Subsidy on various fertilizer grades will be released to the fertilizer companies on the basis of actual sales made by the retailers to the beneficiaries under direct benefit transfer system.
- **Balanced use of fertilizers:** The scheme is in line with the government's focus on promoting a balanced use of fertilizers or alternative fertilizers in the last few years.
- **New nutrients:** New nutrients such as Nano urea and "bio-stimulants" have been added in the Fertilizer Control Order-1985 (FCO).
- **Reduce excessive use:** Initiatives like Soil Health Card and neem-coated urea have also been taken to ensure controlled use of fertilizers.

Status of Fertilizer Usage in India

- The total requirement of four fertilisers — Urea, DAP (Di-ammonium Phosphate), MOP (Muriate of potash), NPK (Nitrogen, Phosphorus and Potassium) — in the country increased by 21% to 640.27 lakh metric tonnes (LMT) in 2021-22 from 528.86 lakh metric tonnes in 2017-18.
- The maximum increase — 25.44% has been recorded in the requirement of DAP. It went up from 98.77 LMT in 2017-18 to 123.9 LMT in 2021-22.
- Urea, the most used chemical fertiliser in the country, recorded an increase of 19.64 per cent — from 298 LMT in 2017-18 to 356.53 in 2021-22 — in the last five years.

FINTECH incentive Scheme (FIS) 2022

Why in News

International Financial Services centres Authority (IFSCA) has launched a scheme to provide financial support to FinTech activities.

Important Points

- The International Financial Services Centres Authority ("Authority" or "IFSCA"), with an overall objective to promote the establishment of a world-class FinTech Hub, at GIFT International Financial Services Centre (IFSC) in India, launched the
- IFSCA (FinTech Incentive) Scheme for providing financial support to FinTech activities in the form of specific grant(s)

This scheme shall be open to -

1. Domestic FinTechs seeking access to overseas markets;
2. Domestic FinTechs seeking listing on IFSCA recognised stock exchanges;
3. Foreign FinTechs seeking market access to IFSCs in India and work within the Authority's regulatory framework;
4. Foreign FinTechs seeking access to domestic market under Inter-Operable Regulatory Sandbox (IORS) framework;
5. Domestic FinTechs extending business to the IFSCs either by way of authorisation or registration or through the regulatory sandbox.

The types of incentives for eligible applicants are:

1. FinTech Start-up grant- This grant shall be utilized for developing a product or a service and related 'go-to market' initiatives for a start-up with a novel FinTech idea or solution with a focus on converting the idea into an MVP.
2. Proof of Concept (PoC) grant- This grant shall be utilized for the purpose of conducting a PoC by an early or mature FinTech Entity (FE) in domestic market or overseas.
3. Sandbox grant- This grant shall be utilized by FEs to experiment with innovative products or services in a sandbox.
4. Green FinTech Grant- This grant shall be utilized towards developing solutions facilitating sustainable finance and sustainability linked finance, including 'Environmental, Social and Governance (ESG)' investments.
5. Accelerator Grant- This grant shall be utilized for supporting accelerators at the IFSC for capacity building, build capabilities around mentors, bringing investors, bringing more projects or PoC, tie ups, etc.
6. Listing Support Grant - The grant shall be utilized for supporting Domestic FE aspiring to go for listing on stock exchanges recognised by the Authority.

The Grants contemplated under this scheme shall be available to eligible FEs:

1. who are part of the Authority's Regulatory or Innovative Sandbox;
2. which are referred to the Authority under a FinTech bridge arrangement with a Counterpart Regulator
3. which have either participated or are participating in any Accelerator or Cohort or Special Programme supported or recognised by the Authority; or
4. who are referred to by the entity(ies) including regulatory or supervisory bodies having Memorandum of Understanding (MoU) or collaboration or special arrangement with the Authority.

U.N. cites possible crimes against humanity in China's Xinjiang

Why in News

China's discriminatory detention of Uyghurs may constitute crimes against humanity as per the U.N. human rights office.

Important Points

- China's discriminatory detention of Uyghurs and other mostly Muslim ethnic groups in the western region of Xinjiang may constitute crimes against humanity, the U.N. human rights office said in a long-awaited report Wednesday, which cited "serious" rights violations and patterns of torture in recent years.
- The report seeks "urgent attention" from the U.N. and the world community to rights violations in Beijing's campaign to root out terrorism.
- U.N. Human Rights chief Michelle Bachelet brushed aside China's calls for office to withhold the report, which follows her own trip to Xinjiang in May and which Beijing's contends is part of a Western campaign to smear China's reputation.
- The report has fanned a tug-of-war for diplomatic influence with the West over the rights of the region's native Uyghurs and other ethnic groups.
- It was unexpected to break significant new ground beyond sweeping findings from researchers, advocacy groups and journalists who have documented concerns about human rights in Xinjiang for several years.
- The report largely corroborates earlier reporting by advocacy groups and others and injects U.N. heft behind the outrage that victims and their families have expressed about China's policies in Xinjiang.
- "Beijing's repeated denial of the human rights crisis in Xinjiang rings ever-more hollow with this further recognition of the evidence of ongoing crimes against humanity and other human rights violation in the region."
- The run-up to the report's release fueled a debate over China's influence at the world body and epitomized the on-and-off diplomatic chill between Beijing and the West over human rights, among other sore spots.
- China released a 122-page report titled "Fight Against Terrorism and Extremism in Xinjiang: Truth and Facts" that defended its record and was distributed by the U.N. with its assessment.
- The U.N. report says "serious human rights violations" have been committed in Xinjiang under China's policies to fight terrorism and extremism, which singled out Uyghurs and other predominantly Muslim communities, between 2017 and 2019.
- The report cites "patterns of torture" inside what Beijing called vocational training centers, which were part of its reputed plan to boost economic development in region, and it points to "credible" allegations of torture or ill-treatment, including cases of sexual violence.
- The report called on China to release all individuals arbitrarily detained and to clarify the whereabouts of individuals who have disappeared and whose families are seeking information about them.
- The report was drawn in part from interviews with former detainees and others familiar with conditions at eight detention centers.
- According to investigations by researchers and journalists, the Chinese government's mass detention campaign in Xinjiang swept an estimated million or more Uyghurs and other ethnic groups into a network of prisons and camps over the past five years.
- The report said that reports of sharp increases in arrests and lengthy prison sentences in the region strongly suggested a shift toward formal incarceration as the principal means for large-scale imprisonment and deprivation of liberty — instead of the use of the "vocational training centers" once

touted by Beijing.

- Some countries, including the United States, have accused Beijing of committing genocide in Xinjiang. The U.N. report made no mention of genocide.

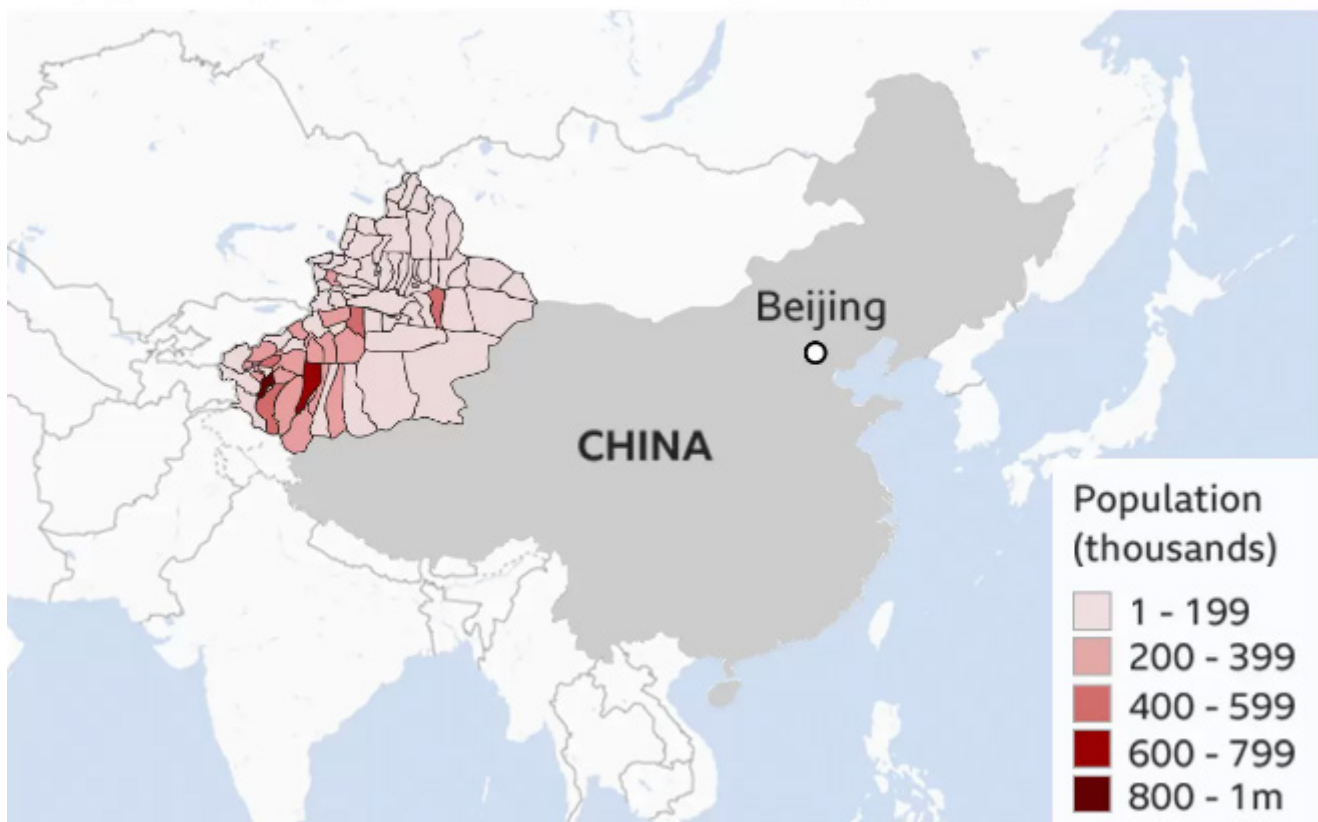
Who are the Uyghurs?

- There are about 12 million Uyghurs, mostly Muslim, living in Xinjiang, which is officially known as the Xinjiang Uyghur Autonomous Region (XUAR).
- The Uyghurs speak their own language, which is similar to Turkish, and see themselves as culturally and ethnically close to Central Asian nations. They make up less than half of the Xinjiang population.
- Recent decades have seen a mass migration of Han Chinese (China's ethnic majority) into Xinjiang, allegedly orchestrated by the state to dilute the minority population there.
- China has also been accused of targeting Muslim religious figures and banning religious practices in the region, as well as destroying mosques and tombs.
- Uyghur activists say they fear that the group's culture is under threat of erasure.

Where is Xinjiang?

- Xinjiang lies in the north-west of China and is the country's largest region. Like Tibet, it is autonomous, meaning - in theory - it has some powers of self-governance. But in practice, both regions are subjected to major restrictions by the central government.

Uyghur population in Xinjiang



NPT

Why in News

The Tenth Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) concluded in New York.

Important Points

The Tenth Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) mark the 52 years of a treaty that every speaker described as the 'cornerstone of the global nuclear

order’.

It was originally planned for its 50th year in 2020, but the conference was delayed due to COVID-19 — it should have been a celebratory occasion, yet, the mood was sombre. And after four weeks of debate and discussion, the delegates failed to agree on a final document.

Nuclear weapons pose an existential threat to humanity. Russia’s threat to use nuclear weapons in the context of its war on Ukraine has been a stark reminder that this threat is real.

At present, nine states are known to have military nuclear programmes.

Over recent years, tensions among nuclear-armed states have increased, leading to ‘outright strategic rivalry and competition’ among several of them.

Moreover, experts are concerned that the ‘fabric of international institutions, treaties, and norms that has historically contributed to predictable and more stable relationships among nuclear-armed States is deteriorating’.

Since the last Review Conference in 2015, the environment surrounding the NPT has become even more severe. The environment surrounding the Conference has also been extremely severe and the prospect of adopting a consensus final document was not bright.

About the Non-Proliferation of Nuclear Weapons (NPT)

The nuclear weapon states, while maintaining the development of their N-weapon programmes, decided to formulate and impose a stricter non-proliferation regime particularly upon the Non-nuclear states.

Features of the NPT:

- (i) All parties to the treaty affirmed the principle that the benefits of peaceful applications of nuclear technology should be available for peaceful purposes to all parties to the treaty, whether nuclear weapon or non-nuclear weapon states.
- (ii) All parties to this treaty are entitled to participate, in the fullest possible extent, in the exchange of scientific information and to contribute alone or in co-operation with other states to the further development of the application of atomic energy for peaceful purposes.
- (iii) Potential benefits from any peaceful applications of nuclear explosions should be available to non-nuclear weapon states which are party to this treaty on a non-discriminatory basis.
- (iv) The declared intention was to achieve, at the earliest possible date, the cessation of the nuclear arms race, urging the co-operation of all states in the attainment of this objective;
- (v) The aim was to further reduce further international tensions and to strengthen trust between states in order to facilitate cessation of the manufacture of nuclear weapons and the liquidation of all their existing stockpiles.

Salient Provisions of NPT:

1. No Nuclear Weapon State will transfer its weapons and technology to Non- Nuclear States.
2. Development of N-technology for peaceful purposes as a right
3. Non-Nuclear States will neither develop nor receive N-weapons.
4. This treaty shall be open to all states for signatures.
5. This treaty shall be subject to ratification by signatory states.

Criticism of NPT:

1. It was a discriminatory treaty which tried to perpetuate the superior power position of nuclear weapon states vis-a-vis the non-nuclear nations.

2. It unduly tried to legitimize the power gap between nuclear and non-clear nations.
3. It did not provide for either disarmament or arms control in international relations.
4. It failed to check the N-programmes of France and China which, in violation of the Moscow Partial Test Ban Treaty, continued the policy of conducting nuclear tests.
5. NPT was really a political instrument of nuclear weapon states. It divided the states into nuclear haves and have-not's.
6. NPT was a discriminatory and inadequate Treaty.

Countries did not Joined NPT

- Four states—India, Israel, Pakistan, and South Sudan—have never signed the treaty. India and Pakistan have publicly disclosed their nuclear weapon programs, and Israel has a long-standing policy of deliberate ambiguity with regards to its nuclear program.

INS Vikrant

Why in News

PM Narendra Modi Commissions INS Vikrant Into Indian Navy

Important Points

- Prime Minister Narendra Modi commissioned India's first indigenously developed and built aircraft carrier INS Vikrant into the Indian Navy. It is the largest ship ever built in India.
- The Made in India ship is a significant boost to Modi government's self-reliance initiative, particularly in strategic sectors.
- During the event, the Prime Minister also unveiled the new Naval Ensign (Nishaan), doing away with the colonial past and befitting the rich Indian maritime heritage. He dedicated the new ensign to Chhatrapati Shivaji.
- Every part of INS Vikrant has its own merits, a strength, a development journey of its own. It is a symbol of indigenous potential, indigenous resources and indigenous skills.
- The steel installed in its airbase is also indigenous, developed by DRDO scientists and produced by Indian companies.
- Explaining the massive proportions of the Carrier, the Prime Minister said it is like a floating city. It produces electricity that is sufficient to power 5000 households and the wiring used will reach Kashi from Kochi.
- INS Vikrant is a living embodiment of the Spirit of the Panch Prans that he proclaimed from the ramparts of Red Fort.



About INS Vikrant

- The commissioning of INS Vikrant is a proud moment for the Nation as it showcased the 'Aatmanirbhar' credentials during 'Azadi ka Amrit Mahotsav' and a true testament to the country's zeal and fervour in pursuing capability build up towards enhanced maritime security in the Indian Ocean Region.
- With the commissioning, India has entered into a select band of Nations having niche capability to indigenously design and build an Aircraft Carrier and real testimony to the Nation's resolve for self-reliance and 'Make in India'.
- INS Vikrant is designed by Indian Navy's in-house Warship Design Bureau (WDB) and built by Cochin Shipyard Limited, a Public Sector Shipyard under the Ministry of Ports, Shipping & Waterways, Vikrant has been built with state of the art automation features and is the largest ship ever built in maritime history of India.
- The 262.5 m long and 61.6 m wide Vikrant displaces approx 43,000 T, having a maximum designed speed of 28 Knots with endurance of 7,500 Nautical Miles.
- The ship has around 2,200 compartments, designed for a crew of around 1,600 including women officers and sailors.
- The carrier is designed with a very high degree of automation for machinery operations, ship navigation and survivability. The carrier is equipped with the latest state of the art equipment and systems.
- The ship is capable of operating air wing consisting of 30 aircraft comprising of MiG-29K fighter jets, Kamov-31, MH-60R multi-role helicopters, in addition to indigenously manufactured Advanced Light Helicopters (ALH) and Light Combat Aircraft (LCA) (Navy).
- Using a novel aircraft-operation mode known as Short Take Off But Arrested Recovery (STOBAR), INS Vikrant is equipped with a ski-jump for launching aircraft, and a set of 'arrestor wires' for their recovery onboard.
- With 76% indigenous content, construction of INS Vikrant has resulted in direct employment generation for over 2,000 employees of CSL.
- In addition, it has resulted in indirect employment generation for approx 12,500 employees for over 550 OEMs, sub-contractors, ancillary industries and over 100 MSMEs as well, thereby bolstering plough back effect on economy.

Grievance Redressal Index 2022

Why in News

UIDAI tops in Grievance Redressal Index during August 2022

Important Points

- Unique Identification Authority of India (UIDAI) has topped amongst all Ministries/Departments for resolving Public Grievances in the ranking report published by Department of Administrative Reforms and Public Grievances (DARPG) for the month of August 2022.
- UIDAI has been a top performer in resolution of cases received through Centralized Public Grievance Redress and Monitoring System (CPGRAMS).
- UIDAI is further committed to serve residents of India, and has been a catalyst for both ease of living and ease of doing business.
- UIDAI has a robust grievance redressal mechanism in place comprising of UIDAI HQ Divisions, Regional Offices, Technology Centre and engaged Contact Centre partners, which is enabling UIDAI to resolve around 92% of CRM Grievances within 7 days.
- The organization is dedicated to further strengthen its Grievance Redressal Mechanism and is going to launch State-of-the-art Open Source CRM solution soon. The new Customer Relationship Management (CRM) solution has been designed with advanced features that shall enhance UIDAI service delivery to residents.
- The new CRM solution shall have the capability to support multi-channels like Phone Call, Email, Chatbot, Web Portal, Social Media, Letter and Walk-in through which the grievances can be lodged,

tracked and resolved effectively. It is under advanced stage of implementation and is going to be rolled out soon.

- Endeavour of the UIDAI is that the residents' voice must be heard, and residents must be empowered adequately to further enhance trust of residents in the system.

About UIDAI:

- It is a statutory authority established in 2009.
- Parent body: Works under the jurisdiction of the Ministry of Electronics and Information Technology.
- Mandate: The UIDAI is mandated to assign a 12-digit unique identification (UID) number (Aadhaar) to all the residents of India.

SPARK Program

Why in News

CCRAS has started the Studentship Program for Ayurveda Research Ken (SPARK) for Ayurveda (BAMS) students studying in recognised Ayurveda colleges.

Important Points

- The Central Council for Research in Ayurvedic Sciences (CCRAS), has taken a unique initiative to support the research efforts of bright young minds of the Country by developing the Studentship Program for Ayurveda Research Ken (SPARK) for Ayurveda (BAMS) students studying in recognised Ayurveda colleges.
- Aim of the program is to help students develop an acumen for research and to further support and incentivise their research ideas.
- SPARK Program aims to support the research ideas of the young upcoming students across all the Ayurveda colleges in India.
- The application process for the SPARK Program will be done online mode.
- The selected students will be offered financial support of Rs. 50,000 under this fellowship.

About CCRAS

It is an autonomous body of the Ministry of AYUSH, Government of India.

It is an apex body in India for the formulation, coordination, development and promotion of research on scientific lines in the Ayurveda and Sowa-Rigpa systems of medicine.

Vision

“To develop scientific evidence in Ayurvedic Principles, drug therapies by way of integrating ancient wisdom with modern technology and to bring Ayurveda to the people through scientific innovations related to diagnostics, preventive, promotive as well as treatment methods and also introduce scientific research for sustained availability of quality natural resources, to translate them into products and processes and in synergy with concerned organizations to introduce these innovations into public health systems.”

Mission

- To aim for AYUSHMAN Bharat by way of promoting better health through evidence based Ayurvedic principles and practices.
- To develop CCRAS into a dynamic, vibrant and model research organization for undertaking, coordinating, aiding and promoting research in Ayurveda.
- To bring-up modern scientific knowledge, technology to explore Ayurveda scientific treasure following prevalent scientific methods.
- To attain global leadership in research for treatment and prevention of emerging important lifestyle related disease and health requirement.

Blue Transformation Roadmap (2022-2030)

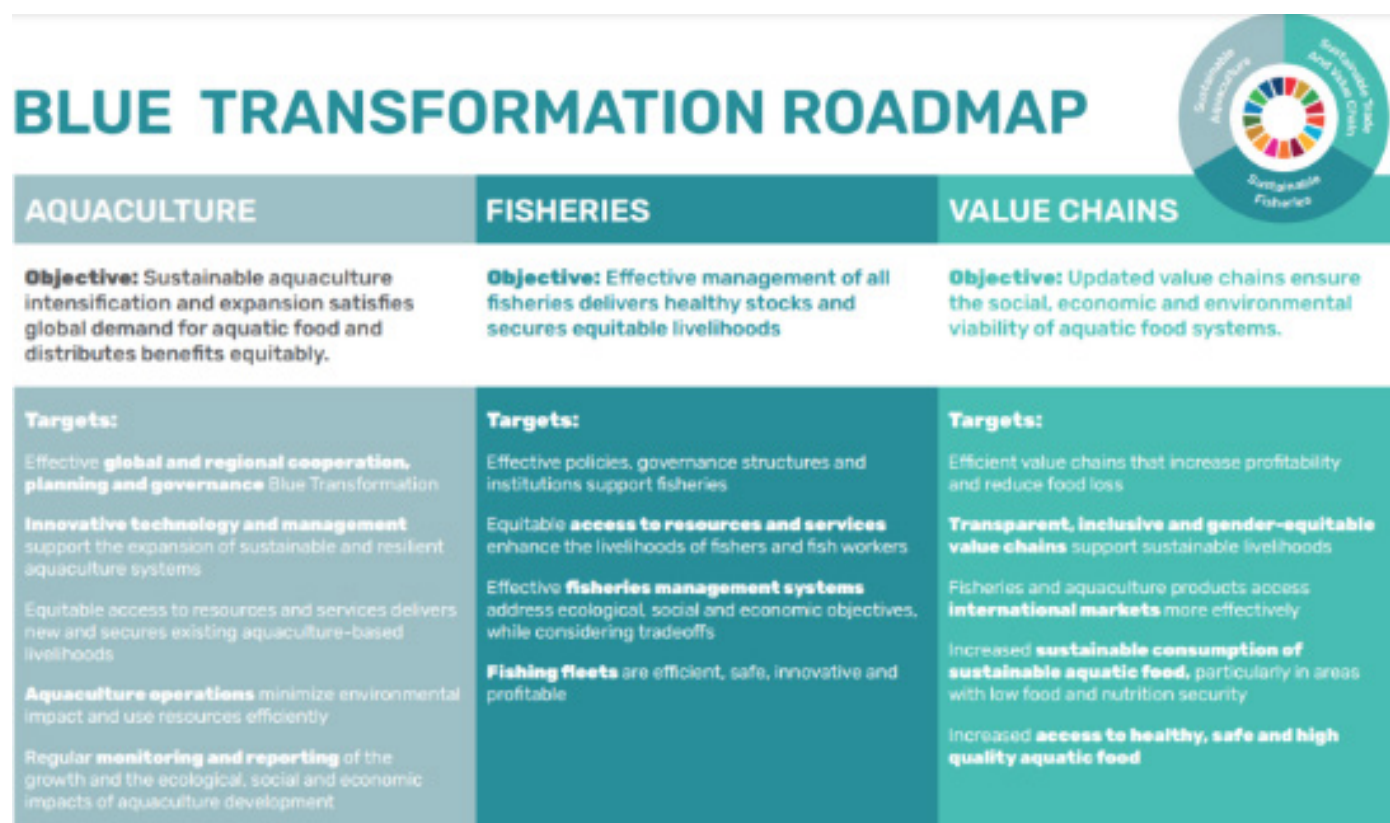
Why in News

FAO has recently released BTR to give importance to the aquatic food system as the driver of employment, inclusive growth, SDGs and environmental recovery.

Important Points

What is Blue Transformation?

- Blue Transformation is a targeted effort by which agencies, countries and dependent communities, use existing and emerging knowledge, tools and practices to secure and sustainably maximize the contribution of aquatic (both marine and inland) food systems to food security, nutrition and affordable healthy diets for all.



Key highlights of the report-

- This document outlines a roadmap for the transformation of aquatic food systems – ‘Blue Transformation’, providing a vision for the FAO’s work on aquatic food systems for the period 2022–2030.
- This roadmap for Blue Transformation aligns with the 2021 Declaration for Sustainable Fisheries and Aquaculture of the Committee on Fisheries (COFI) of the Food and Agriculture Organization of the United Nations (FAO) and FAO’s Strategic Framework 2022–2031.
- It focuses on the elements that would maximize the contribution of aquatic food systems to the Sustainable Development Goals (SDGs).
- The roadmap recognizes the importance of aquatic food systems as drivers of employment, economic growth, social development and environmental recovery, which all underpin the SDGs.
- It also recognizes the need to support the 2030 Agenda through the transformation to more efficient, inclusive, resilient and sustainable aquatic food systems for better production, better nutrition, a better environment, and a better life, leaving no one behind.
- It provides an overall framework to support planning, implementation, monitoring and communication of FAO Fisheries and Aquaculture Division (NFI)’s work.

Subhas Chandra Bose

Why in News

A statue of Subhas Chandra Bose was unveiled by PM Modi at India Gate, inaugurated along with the Kartavya Path that was earlier known as Rajpath.

Important Points

The statue is placed under the Grand Canopy of the monument and has been inaugurated along with the Kartavya Path, formerly known as Rajpath.

About Subhas Chandra Bose:

- Subhash Chandra Bose was born on 23 January, 1897 in Cuttack (Orissa) to Janakinath Bose and Prabhavati Devi.
- He was strongly influenced by Swami Vivekananda's teachings and was known for his patriotic zeal as a student.
- To fulfill his parents wishes he went to England in 1919 to compete for Indian Civil Services.
- In England he appeared for the Indian Civil Service competitive examination in 1920, and came out fourth in order of merit.
- However, Subhas Chandra Bose was deeply disturbed by the Jallianwalla Bagh massacre, and left his Civil Services apprenticeship midway to return to India in 1921.
- During his term as Congress President, he talked of planning in concrete terms, and set up a National planning Committee.
- 1939 Netaji Subhas Chandra Bose resigned from Indian National Congress Presidentship and formed All India Forward Bloc AIFB in Calcutta.
- In July 1943, he arrived in Singapore from Germany. In Singapore he took over the reins of the Indian Independence Movement in East Asia from Rash Behari Bose and organised the Azad Hind Fauj (Indian National Army) comprising mainly of Indian prisoners of war.
- The I.N.A. Head quarters was shifted to Rangoon in January 1944. Azad Hind Fauj crossed the Burma Border, and stood on Indian soil on March 18, 1944.



India's Presidency

Why in News

India's Presidency of the prestigious Asia-Pacific Institute of Broadcasting Development (AIBD) has been extended for one more year.

Important Points

- India's Presidency of the prestigious Asia-Pacific Institute of Broadcasting Development (AIBD) has been extended for one more year.
- This was unanimously decided by the AIBD member countries at the two day General Conference of the Institute held in New Delhi.
- The Asia-Pacific Institute for Broadcasting Development (AIBD), established in 1977 under the auspices of UNESCO, is a unique regional inter-governmental organisation servicing countries of the United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP) in the field of electronic media development.
- The AIBD is mandated to achieve a vibrant and cohesive electronic media environment in the Asia-Pacific region through policy and resource development.
- The AIBD currently has 26 countries as full members represented by 43 organizations, and 52 affiliate members.
- The 47th AIBD Annual Gathering / 20th AIBD General Conference and Associated Meetings held in New Delhi witnessed a range of discussions, presentations and idea exchange sessions especially focusing on the topic of "Building a Stronger Future of Broadcasting in post pandemic era".
- A five year plan for co-operative activities and exchange programmes was also finalised.
- All the participating countries and member broadcasters pledged to work together for a sustainable broadcasting environment, latest technology know-how, finest content creation, various co-operative activities.

India's Defence Budget

Why in News

India's defence exports jumps 334% in last 5 years; supplies to 75 countries

Important Points

The Indian defence ecosystem is spreading its arms overseas as military exports have jumped by 334% in the last five years, which involves supplies of arsenals to more than 75 countries around the globe.

With collaborative efforts, India has taken several policy initiatives in the past few years to amplify its indigenous design, development, and manufacture of defence equipment, to make world-class military apparatus.

Notably, India exported around Rs 1,387 crore worth of defence-related exports during the first quarter of the financial year 2022-23 (April-June), data showed.

Further, the country's defence and technology related exports touched the highest-ever figure of Rs 12,815 crore in the financial year 2021-22, a 54.1 per cent rise over the previous year.

It is pertinent to note that the exports in the financial year 2022 were almost eight times what they were about five years back.

According to the reports, India's defence exports were worth Rs 8,434 crore in 2020-21, Rs 9,115 crore in 2019-20 and Rs 2,059 crore in 2015-16.

India's defence exports are mainly to countries like the US, the Philippines and other countries in South-East Asia, the Middle East and Africa.

Boosting Indigenous Manufacturing

- In the past few years, the Government of India has taken various policy initiatives to encourage indigenous manufacturing of defense equipment, thereby promoting self-reliance in defense manufac-

turing & technology.

- The slew of initiatives include priority to the procurement of capital items from domestic sources under Defence Acquisition Procedure (DAP)-2020, the announcement of 18 major defense platforms for industry-led design and development, liberalization of foreign direct investment (FDI) policy allowing 74 per cent investment under the automatic route, among several others.
- To minimize import by Defence Public Sector Undertakings (DPSUs), the Department of Defence Production (DDP) has notified three Positive Indigenisation Lists (PIL) of sub-systems/assemblies/sub-assemblies/ components. The first list contains 2,851 items out of which 2,500 items have already been indigenized.
- The second list consists of 107 strategic important Line Replacement Units/major sub-assemblies. The third list includes 101 military equipment which will come into effect from December 2022. Strategic defence products including Light Tanks, Helicopters, and Unmanned Aerial Vehicles are the part of indigneous list for which there would be an embargo on the import beyond the timelines indicated against them.
- Importantly, two defense industrial corridors have been established — one each in Uttar Pradesh and Tamil Nadu to bolster indigneous manufacturing.

India eyes Rs 35,000 crore exports by 2025

- The Defence Ministry has set a target of Rs 1.75 lakh crore of defence production by 2025, which will include export of Rs 35,000 crore.
- The major role in achieving this goal with a contribution of 70-80 percent would be done by India's Defence Public Sector Undertakings (PSUs).
- Listing out various initiatives taken by Defence Ministry to achieve self-reliance, Rajnath Singh mentioned that simplification of acquisition process under Defence Acquisition Procedure 2020;
 - flexibility in Offset guidelines;
 - increase in FDI limit to 74% under Automatic Route and up to 100% under government route;
 - simplification of process of obtaining license;
 - launch of Innovations for Defence Excellence (iDEX) initiative and
 - enhanced use of Artificial Intelligence in the defence sector have bolstered the goal to achieve self-reliance.

Chief of Defence Staff

Why in News

Lt. General Anil Chauhan (retd.) appointed next Chief of Defence Staff

Important Points

- The Government of India appointed former Eastern Army Commander Lt. General Anil Chauhan as the next Chief of Defence Staff (CDS).
- The post has been vacant since the death of the country's first CDS Gen. Bipin Rawat in a helicopter crash in December 2021.
- The Government has decided to appoint Lt. Gen. Anil Chauhan (Retired) as the next Chief of Defence Staff (CDS) who shall also function as Secretary to Government of India, Department of Military Affairs with effect from the date of his assumption of charge and until further orders.
- In a career spanning over nearly 40 years, Lt. Gen. Anil Chauhan had held several command, staff and instrumental appointments and had extensive experience in counter-insurgency operations in Jammu and Kashmir and North-East India.
- In June, the Government amended Service Rules of the Army, Navy and Air Force allowing retired Service Chiefs and three star rank officers eligible for consideration to the country's top military post.
- However, with an age limit imposed that the retired officer should not have attained 62 years on the date of appointment, retired Service Chiefs were largely ruled out especially so for the present consideration.
- Post retirement, Lt. Gen. Chauhan took over as the Military Advisor in the National Security Council Secretariat (NSCS) from Lt. Gen. Vinod G. Khandare who stepped down from the post in October

2021.

- In December 2019, the Government approved the creation of the post of CDS who would also function as the Principal Military Adviser to Defence Minister and Permanent Chairman Chiefs of Staff Committee (COSC).
- In addition, the DMA was created as the fifth department in the Ministry of Defence (MoD) with the CDS functioning as its Secretary.
- While the tenure of Service Chiefs is 62 years of age or three years whichever is earlier, the age limit for the CDS is 65 years of age with no fixed tenure defined.
- Gen. Bipin Rawat who had served as the 27th Army Chief from December 31, 2016 till December 31, 2019, took over as the first CDS on January 1, 2020.
- Lt. Gen. Chauhan was commissioned into the 11 Gorkha Rifles of the Indian Army in 1981. He is an alumnus of the National Defence Academy, Khadakwasla and Indian Military Academy, Dehradun.
- In the rank of Major General, he had commanded an Infantry Division in Baramulla sector in Jammu and Kashmir.
- Later as Lt. General, he commanded a Corps in the North East and subsequently became the Eastern Army Commander in September 2019 and held the charge until his retirement from service on May 31, 2021.
- In addition to these command appointments, Lt. Gen. Chauhan also served as Director General of Military Operations.

Major task ahead

- General Rawat was pushing forward the ambitious plan for reorganisation of the armed forces into integrated theatre commands among other measures to bring in synergy and efficiency.
- The broad mandate of the CDS includes bringing about “jointness” in “operations, logistics, transport, training, support services, communications, repairs and maintenance of the three Services, within three years of the first CDS assuming office”.
- This task now falls on the new CDS to build consensus and take the reorganisation process forward, which has been delayed due to lack of complete consensus and objections on certain aspects from the Air Force.
- Detailed studies have already been carried out, and table top exercises executed in the recent past to fine tune the modalities. Additional studies have also been carried out in this direction.
- In addition, the war in Ukraine has added urgency on the need to indigenise critical military technologies and systems and reduce dependence on imports.

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