



drishti

Current
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Polity and Governance

Highlights

- Criterion for SC Status
- Midday Meal Scheme (PM Poshan Scheme)
- Armed Forces (Special Powers) Act (AFSPA)
- Swachh Survekshan Awards 2022
- IMEI Number
- National Disaster Management Authority
- Section 66A of the IT Act, 2000
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- The Places of Worship Act
- Revenue Deficit Grants
- Multi-State Cooperatives
- Democratic Decentralisation in India

Criterion for SC Status

Why in News?

Recently, the Supreme Court has sought the government's position on petitions challenging the **Constitution (Scheduled Castes) Order of 1950**, which allows only members of **Hindu, Sikh and Buddhist** religions to be recognised as SCs.

What is the Petition about?

- The petitions arguing for inclusion Dalit Christians and Muslims have cited **several independent Commission reports** that have documented the **existence of caste and caste inequalities among Indian Christians and Indian Muslims**.
- Petitions cited that even after conversion, members who were originally from SCs continued to **experience the same social disabilities**.
- The petitions have argued against the proposition that caste identity is lost upon conversion, noting that even in **Sikhism and Buddhism, casteism is not present and yet they have been included as SCs**.
- By citing various reports and commission, petitions argue that caste-based discrimination continues even after conversion, hence entitling **these communities to SC status**.

Who is included in the Constitution Order of 1950?

- When enacted, the **Constitution (Scheduled Castes) Order of 1950**, initially provided for recognising **only Hindus as SCs**, to address the social disability arising out of the practice of untouchability.

Hindus as SCs, to address the social disability arising out of the practice of untouchability.

- The Order was amended in 1956 to include Dalits who had converted to Sikhism and once more in 1990 to include Dalits who had converted to Buddhism. Both amendments were aided by the reports of the **Kaka Kalelkar Commission in 1955** and the High-Powered Panel (HPP) on Minorities, Scheduled Castes and Scheduled Tribes in 1983 respectively.
- The Union government in 2019 rejected the possibility of **including Dalit Christians as members of SCs**, rooting the exclusion on an Imperial Order of 1936 of the then colonial government, which had first classified a list of the Depressed Classes and specifically excluded "Indian Christians" from it.

Why are Dalit Christians excluded?

- The Office of the **Registrar General of India (RGI)** had cautioned the government that SC status is meant for communities **suffering from social disabilities arising out of the practice of untouchability, which it noted was prevalent in Hindu and Sikh communities**.
- It also noted that such a move would significantly swell the population of SCs across the country.
- In 2001, RGI referring to 1978 note and added that like Dalit Buddhists, Dalits who converted to Islam or Christianity belonged to different sets of caste groups and not just one, as a result of which **they cannot be categorised as a "single ethnic group"**, which is required by Clause (2) of Article 341 for inclusion.

Note:

- Moreover, the RGI opined that since the practice of “untouchability” was a feature of Hindu religion and its branches, allowing the inclusion of Dalit Muslims and Dalit Christians as SCs could result in being “misunderstood internationally” as India trying to “impose its caste system” upon Christians and Muslims.
- The 2001 note also stated that Christians and Muslims of Dalit origin had lost their caste identity by way of their conversion and that in their new religious community, the practice of untouchability is not prevalent.

What are the Arguments in favor of Religion-Neutral Reservation?

- The change in religion does not change social exclusion.
- The social hierarchy and specifically caste hierarchy continues to remain within Christianity and Muslims even though the religion forbids it.
- Considering the above scenario, the reservation needs to be delinked from religion.

Is this the first time the government has considered this issue?

- In 1996, the government first brought a Bill to amend the Constitution (Scheduled Castes) Order which could not be passed.
- The government within days attempted to include Dalit Christians as SCs through an Ordinance, which was sent to the President of India but could not then be promulgated.
- In 2000, the Atal Bihar Vajpayee government had sought the opinion of the Office of the RGI and the then National Commission for Scheduled Castes and Scheduled Tribes on whether Dalit Christians could be included. Both had recommended against the proposition.
- Apart from this, several attempts have been made from time to time but all failed.

What are the Constitutional Provisions For Upliftment of the Schedule Caste?

- Article 15(4) refers to the special provisions for their advancement.
- Article 16(4A) speaks of “reservation in matters of promotion to any class or classes of posts in the services under the State in favour of SCs/STs, which are not adequately represented in the services under the State’.

- Article 17 abolishes Untouchability.
- Article 46 requires the State ‘to promote with special care the educational and economic interests of the weaker sections of the people, and, in particular, of the Scheduled Castes and the Scheduled Tribes, and to protect them from social injustice and all forms of exploitation.
- Article 335 provides that the claims of the members of the Scheduled Castes and the Scheduled Tribes shall be taken into consideration, consistently with the maintenance of efficiency of administration, in the making of appointments to services and posts in connection with the affairs of the Union or of a State.
- Article 330 and Article 332 of the Constitution respectively provide for reservation of seats in favour of the Scheduled Castes and the Scheduled Tribes in the House of the People and in the legislative assemblies of the States.
- Under Part IX relating to the Panchayats and Part IXA of the Constitution relating to the Municipalities, reservation for SC and ST in local bodies has been envisaged and provided.

Midday Meal Scheme (PM Poshan Scheme)

Why in News?

Recently, the Ministry of Finance has approved a hike of 9.6 % cooking cost per child under the Mid-Day Meal Scheme.

- Since the last hike in early 2020, the cooking cost per child has been Rs 4.97 per child per day in primary classes (class I-V), and Rs 7.45 (class VI-VIII) in upper primary classes. After the hikes come into effect, the allocation at the primary level and upper primary levels will be Rs 5.45 and Rs 8.17, respectively.

What is the Midday Meal Scheme?

- **About:**
 - The Midday meal scheme (under the Ministry of Education) is a centrally sponsored scheme which was launched in 1995.
 - It is the world’s largest school meal programme aimed to attain the goal of universalization of primary education.

Note:

- Provides cooked meals to every child within the age group of six to fourteen years studying in classes I to VIII who enrolls and attends the school.
 - In 2021, it was renamed as '**Pradhan Mantri Poshan Shakti Nirman' scheme (PM Poshan Scheme)**' and it also covers students of balvatikas (children in the 3–5-year age group) from pre-primary classes.
- **Objective:**
- Address hunger and **malnutrition**, increase enrolment and attendance in school, improve socialisation among castes, provide employment at grassroot level especially to women.
- **Quality Check:**
- **AGMARK** quality items are procured, tasting of meals by two or three adult members of the school management committee.
- **Food Security:**
- If the Mid-Day Meal is not provided in school on any school day due to non-availability of food grains or any other reason, the State Government shall pay food security allowance by 15th of the succeeding month.
- **Regulation:**
- The State Steering-cum Monitoring Committee (SSMC) oversees the implementation of the scheme including establishment of a mechanism for maintenance of nutritional standards and quality of meals.
- **Nutritional Standards:**
- Cooked meals having nutritional standards of 450 calories and 20 gms of pulses for primary (I-V class) and 700 calories and 30 gms of pulses for upper primary (VI-VIII class)
- **Coverage:**
- All government and government aided schools, Madarsa and Maqtabs supported under the **Sarva Shiksha Abhiyan (SSA)**.
 - The scheme covers **11.80 crore children across Classes 1 to 8** (age group 6 to 14) in 11.20 lakh government and government-aided schools and those run by local bodies such as the municipal corporations in Delhi under the provisions of the **National Food Security Act, 2013 (NFSA)**.
 - In the **Budget for 2022-23**, the Centre has earmarked **Rs 10,233 crore for the scheme**, while the states are expected to spend Rs 6,277 crore.

What are the Issues and Challenges?

- **Corrupt Practices:**
 - There have been instances of plain chapatis being served with salt, mixing of water in milk, food poisoning etc.
- **Caste Bias and Discrimination:**
 - Food is central to the caste system, so in many schools, children are made to sit separately according to their caste status.
- **Covid-19:**
 - **Covid-19** has posed serious threats to children and their health and nutritional rights.
 - The nationwide **lockdown** has disrupted access to essential services, including Mid-Day Meals.
 - Although dry foodgrains or cash transfers have been provided to families instead, food and education advocates have warned that this would not have the same impact as hot cooked meals on the school premises, especially for girl children who face more discrimination at home and are more likely to drop out of school due to the closures.
- **Menace of Malnutrition:**
 - According to the **National Family Health Survey-5**, several states across the country have reversed course and recorded worsening levels of child malnutrition.
 - India is home to about 30% of the world's stunted children and nearly 50% of severely wasted children under the age of five.
- **Global Nutrition Report-2020:**
 - As per the **Global Nutrition Report 2020**, India is among 88 countries that are likely to miss global nutrition targets by 2025.
- **Global Hunger Index (GHI) 2020:**
 - India has been ranked at 94 among 107 countries in the **Global Hunger Index (GHI) 2020**. India has a level of hunger that is "serious".

Armed Forces (Special Powers) Act (AFSPA)

Why in News?

Recently, the Ministry of Home Affairs (MHA) has extended the **Armed Forces (Special Powers) Act (AFSPA)** in parts of Arunachal Pradesh and Nagaland for another six months.

Note:

What are the Armed Forces (Special Powers) Act (AFSPA)?

➤ **Background:**

- A reincarnation of the British-era legislation that was enacted to quell the protests during the **Quit India movement**, the AFSPA was issued by way of four ordinances in 1947.
- The ordinances were **replaced by an Act in 1948** and the present law effective in the Northeast was introduced in Parliament in 1958 by the then Home Minister, G.B. Pant.
- It was known initially as the **Armed Forces (Assam and Manipur) Special Powers Act, 1958**.
- After the States of Arunachal Pradesh, Meghalaya, Mizoram, and Nagaland came into being, the Act was adapted to apply to these States as well.

➤ **About:**

- The AFSPA gives **unfettered powers to the armed forces and the Central armed police forces** deployed in “disturbed areas” to kill anyone acting in contravention of law and arrest and search any premises without a warrant and with protection from prosecution and legal suits.
- The law first came into **effect in 1958 to deal with the uprising in the Naga**
- The Act was amended in 1972 and the powers to declare an area as “disturbed” were conferred concurrently upon the Central government along with the States.
- Tripura revoked the Act in 2015 and Meghalaya was under AFSPA for 27 years, until it was revoked by the MHA from 1st April 2018.
- Currently AFSPA is in some parts of Assam, Nagaland, Manipur and Arunachal Pradesh.

What is the Controversy Around the Act?

➤ **Human Rights Violations:**

- The law **empowers security personnel, down to non-commissioned officers**, to use force and shoot “even to the causing of death” if they are convinced that it is necessary to do so for the “maintenance of public order”.
- It also **grants soldiers executive powers** to enter premises, search, and arrest without a warrant.
- The exercise of these extraordinary powers by armed forces has **often led to allegations of fake encounters and other human rights violations** by

security forces in disturbed areas while questioning the indefinite imposition of AFSPA in certain states, such as Nagaland and J&K.

➤ **Recommendations of Jeevan Reddy Committee:**

- In November 2004, the Central government appointed a five-member committee headed by Justice B P Jeevan Reddy to review the provisions of the act in the northeastern states.
- The committee recommended that:
 - **AFSPA should be repealed** and appropriate provisions should be inserted in the **Unlawful Activities (Prevention) Act, 1967**
 - The Unlawful Activities Act should be modified to clearly specify the powers of the armed forces and paramilitary forces and Grievance cells should be set up in each district where the armed forces are deployed.

➤ **Second ARC Recommendation:** The 5th report of the Second Administrative Reforms Commission (ARC) on public order has also **recommended the repeal of the AFSPA**. However, these recommendations **have not been implemented**.

What are the Supreme Court Views on the Act?

- The Supreme Court has **upheld the constitutionality of AFSPA in a 1998 judgment** (*Naga People's Movement of Human Rights v. Union of India*).
- In this judgment, the Supreme Court held that
 - a suo-motu declaration can be made by the Central government, however, it is desirable that the state government should be consulted by the central government before making the declaration;
 - the declaration has to be for a limited duration and there should be a periodic review of the declaration 6 months have expired;
 - while exercising the powers conferred upon him by AFSPA, the authorized officer should use minimal force necessary for effective action.

Swachh Survekshan Awards 2022

Why in News?

Recently, the President awarded **Indore** as the cleanest city for the sixth consecutive year as part of the Azadi@75 Swachh Survekshan 2022, hosted as part of the **Swachh Bharat Mission- Urban 2.0**.

Note:

- Indore further emerged as **India's first 7-star Garbage Free city**, while Surat, Bhopal, Mysuru, Navi Mumbai, Vishakhapatnam, and Tirupati earned 5-star Garbage Free certifications.

What are Swachh Survekshan Awards?

- **About:** Swachh Survekshan has been conducted since 2016 and is the **world's largest urban sanitation and cleanliness survey**.
 - It has been instrumental in fostering a spirit of healthy competition among towns and cities to improve their service delivery to citizens and towards creating cleaner cities.
 - It is conducted under the ambit of the **Swachh Bharat Mission (Urban)**,
- **Goal:** The primary goal of Swachh Survekshan is to **encourage large-scale citizen participation and create awareness** amongst all sections of society about the importance of working together toward making towns and cities better places to reside in.
- **Nodal Ministry:** Ministry of Housing and Urban Affairs (MoHUA).

What are the Key Highlights of Swachh Survekshan Awards 2022?

- **Cleanest City:**
 - **More than 1 lakh Population:** Indore, the city of lakes and palaces, walked away with the **Cleanest City title**, while Surat was adjudged the **second cleanest city**, for the second time in a row, Navi Mumbai bagged the **third spot**.
 - **Less than 1 lakh Population:** Panchgani and Karad from Maharashtra bagged the first and **third positions** respectively, while Patan from Chhattisgarh bagged the second position.
- **Best Ganga Town:** Haridwar in Uttarakhand received the award for the best Ganga town in more than one lakh population cities.
- **Fast Mover City Award:** Shivamogga in Karnataka.
- **Cleanest States:**
 - **States with More than 100 Urban Local Bodies:** Madhya Pradesh emerged as the 'Cleanest State', Chattisgarh in second place and third in Maharashtra.
 - **States with less than 100 Urban Local Bodies:** Tripura emerged as the Cleanest State. Jharkhand and Uttarakhand received the second and third spots respectively.

Note:

Swachh Survekshan Awards 2022

More than 100K population

TOP 5 CITIES

RANK/ULB	SCORE
1 INDORE (MP)	7,146
2 SURAT (GUJ)	6,925
3 NAVI MUMBAI (MAHA)	6,853
4 GVMC VIZAG (AP)	6,701
5 VIJAYAWADA (AP)	6,699



Indore is India's first 7-star garbage-free city, a key objective of the second iteration of Swachh Bharat Mission.

Less than 100K population

BOTTOM 5 CITIES

RANK/ULB	SCORE
96 GORAKHPUR (UP)	4,457
97 REWA (MP)	4,451
98 DAMOH (MP)	4,451
99 VAPI (GUJ)	4,450
100 AGRA (UP)	4,441

TOP 5 CITIES

RANK/ULB	SCORE
1 PANCHGANI (MAHA)	6,396
2 PATAN (C'garh)	6,239
3 KARHAD (MAHA)	6,213
4 LONAVALA (MAHA)	5,990
5 KARJAT (MAHA)	5,786

RANK/ULB	SCORE
96 WAI (MAHA)	5,097
97 ADBHAR (C'GARH)	5,093
98 SHAHDOL (MP)	5,091
99 SANAWAD (MP)	5,089
100 GADARWARA (MP)	5,065

What is Swachh Bharat Mission 2.0?

- SBM-U 2.0, announced in **Budget 2021-22**, is the continuation of **SBM-U first phase**.
- The government is trying to tap safe containment, transportation, disposal of faecal sludge, and septage from toilets. It will be implemented over five years from **2021 to 2026 with an outlay of Rs. 1.41 lakh crore**.
- It focuses on source segregation of garbage, reduction in single-use plastic and air pollution, by effectively managing waste from construction and demolition activities and **bioremediation of all legacy dump sites**.
- Under this mission, all wastewater will be treated properly before it is discharged into water bodies, and the government is trying to make maximum reuse a priority.

IMEI Number

Why in News?

The **Department of Telecommunications (DoT)** has made it mandatory for mobile phone manufacturers to register the **International Mobile Equipment Identity (IMEI)** of all handsets made in India with the **Indian Counterfeited Device Restriction portal** of Government of India.

- The IMEI number of mobile phones imported to India will also have to be registered on the same portal of the Government prior to the import of the mobile phone into the country.

What is an IMEI Number?

- **About:** The IMEI is a **unique number that is used to identify a device on a mobile network**. It has 15 digits and is like a phone's unique identity.
 - The telecom department and the customs department work together to check and record the IMEI numbers of handsets that come into India.
- **Functions:** The number is used to **verify the identity of a device when a user uses the Internet or places a call through it**. Phones with a dual-SIM option has two IMEI numbers, one for each SIM.
 - The IMEI number can help network providers track down a device in case it gets stolen or is lost. Once such loss or theft is reported, the carriers can deny the device access to the cellular network even with a new SIM card.
- **Categorisation:** The Communications Ministry had earlier rolled out a **Central Equipment Identity Register (CIER)**, which **categorises mobile phones based on their IMEI status in three lists – white, grey and black**.
 - Mobile phones with IMEI numbers on the **white list are permitted for use**, while those on the **blacklist are the ones that are reported stolen or lost** and are not allowed to access the network.
 - Devices with IMEI numbers in the **greylist do not conform to standards but are permitted to connect under supervision**. The register also allows the DoT to carry out IMEI-based lawful interception.
- **Prevention of Tampering:** In 2017, the government had notified rules to prevent tampering with IMEI numbers of phones by making it a punishable offence which could also attract a jail term.

What was the need for Making IMEI Number Mandatory?

- It has been found that the IMEI numbers have been **reprogrammed for creating duplicate handsets** as well, right from the supplier to the seller, one may not realise that a phone with a duplicate code has been sold.
- **Reduce Theft & Cloning of Mobile Phones:** The theft and cloning of mobile phones has become a serious

problem. The theft of mobile phones is not just a financial loss but also a **threat to the personal life of the citizens as well as national security**.

National Disaster Management Authority

Why in News?

Recently, the **National Disaster Management Authority (NDMA)** celebrated its **18th Formation Day** on 28th September, 2022.

- **Theme 2022:** Volunteerism in Disaster Management.

What is NDMA?

- **About**
 - The National Disaster Management Authority (NDMA) is **India's apex statutory body for disaster management**.
 - The NDMA was formally constituted on **27th September 2006**, by the Disaster Management Act, 2005. The Prime Minister is its chairperson and it has nine other members. One of the nine members is designated as Vice-Chairperson.
 - The primary responsibility for the management of disaster rests with the **State Government concerned**. However, the National Policy on Disaster Management puts in place an enabling environment for all i.e., the Centre, state and district.
 - The government is working on a programme to set up disaster management volunteers (**Aapada Mitra**) in 350 districts of the country.
- **Aapada Mitra:**
 - It is a **Central Sector Scheme** that was launched in May 2016.
 - NDMA is the implementing agency.
 - It is a programme to **identify suitable individuals in disaster-prone regions** who can be trained to be first responders in times of disasters.
 - To provide the community volunteers with the skills that they would need to respond to their community's immediate needs in the aftermath of a disaster thereby enabling them to undertake basic relief and rescue tasks during emergency situations such as floods, flash-floods and urban flooding.

Note:

How has NDMA evolved?

- In recognition of the importance of Disaster Management as a national priority, **the Government of India set up a High-Powered Committee (HPC) in August 1999** and a National Committee after the Gujarat earthquake (2001), for making recommendations on the preparation of Disaster Management plans and suggesting effective mitigation mechanisms.
- The **Tenth Five-Year Plan document** also had, for the first time, a detailed chapter on Disaster Management. The Twelfth Finance Commission was also mandated to review the financial arrangements for Disaster Management.
- On 23rd December 2005, the **Government of India enacted the Disaster Management Act, which envisaged the creation of NDMA**, headed by the Prime Minister, and State Disaster Management Authorities (SDMAs) headed by respective Chief Ministers, to spearhead and implement a holistic and integrated approach to Disaster Management in India.

What are the Functions and Responsibilities of NDMA?

- Approve the National Disaster Plan
- Lay down policies on disaster management
- Approve plans prepared by Ministries or Departments of the Central Government in accordance with National Plan
- Lay down guidelines to be followed by State Authorities in drawing up State Plan
- Lay down guidelines to be followed by different Ministries or Departments of Central Government for the purpose of integrating measures for disaster prevention or mitigation of its effects in their development plans and projects
- Coordinate enforcement and implementation of disaster management policy and plan.
- Recommend provision of funds for the purpose of mitigation
- Provide such support to other countries affected by major disasters as determined by the Central Government
- Take such other measures for prevention of disasters or mitigation or preparedness and capacity building for dealing with threatening disaster situation or disaster as it may consider necessary

- Lay down broad policies and guidelines for the functioning of National Institute of Disaster Management

What are the Shortcomings and Challenges?

- Questions were raised about the role of **NDMA during Uttarakhand Flooding in 2013**, where it failed to timely inform people about the flash floods and landslides. The post disaster relief response had been equally poor. Experts blamed the poor planning of NDMA that lead to unfinished projects for flood and landslide mitigation.
- A **CAG (Comptroller and Auditor-General)** report noted that there were delays in completion of **projects under the flood management programmes**.
 - It held that **there were huge delays in completion of river management activities** and works related to border areas projects which were long-term solutions for the flood problems of Assam, north Bihar and eastern Uttar Pradesh.
- Devastations during **Kerala Floods in 2018** and **Chennai Floods in 2015** were eye-opening for the institutions regarding preparedness for the disaster situation.
- CAG report on 2015 Chennai Floods **termed it to be a “man-made disaster”** and holds Tamil Nadu government responsible for the catastrophe.
- The **NDRF personnel lack sufficient training, equipment, facilities and residential accommodation** to tackle the crisis situation properly.
- Misutilization of Funds- Government constituted National Disaster Response Fund and State Disaster Response Fund to deal with the disasters.
 - Audit findings reveal that some states have misutilized funds for expenditures that were not sanctioned for disaster management.

What are India's Efforts in Managing Disaster?

- **Establishment of National Disaster Reaction Force (NDRF):**
 - India has increasingly **mitigated and responded to all types of disasters**, including with the establishment of its **National Disaster Reaction Force (NDRF)**, the world's largest rapid reaction force dedicated to disaster response.
- **India's Role as a Foreign Disaster Relief:**
 - India's foreign humanitarian assistance has increasingly included its military assets, primarily deploying naval ships or aircraft to deliver relief.

Note:

- In line with its diplomatic policy of “**Neighbourhood First**,” many of the recipient countries have been in the region of South and Southeast Asia.
- **Contribution to Regional Disaster Preparedness:**
 - Within the context of the **Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)**, India has hosted DM Exercises that allow NDRF to demonstrate for counterparts from partner states the techniques developed to respond to various disasters.
 - Other NDRF and Indian Armed Forces exercises have brought India’s first responders into contact with those from states in the **South Asian Association for Regional Cooperation (SAARC)** and the **Shanghai Cooperation Organisation (SCO)**.
- **Managing Climate Change related Disaster:**
 - India has adopted the **Sendai Framework for Disaster Risk Reduction**, the **Sustainable Development Goals (2015-2030)**, and the **Paris Agreement** on Climate Change, all of which make clear the connections among DRR, Climate Change Adaptation (CCA), and sustainable development.

- Even sending emails for causing annoyance, inconvenience, or to deceive or mislead the recipient about the origin of the message was punishable under this section.
- The court struck down the provision as **unconstitutional and a violation of free speech in 2015 in the Shreya Singhal Case.**
 - The section relating to restrictions on online speech was **declared unconstitutional on grounds of violating the freedom of speech** guaranteed under Article 19(1)(a) of the Constitution of India.
 - It held that **online intermediaries would only be obligated to take down content** on receiving an order from a court or government authority.

➤ Issues with Section 66A:

- **Based on Undefined Actions:**
 - The weakness of Section 66A lay in the fact that it **had created an offence on the basis of undefined actions**: such as causing “inconvenience, danger, obstruction and insult”, which do not fall among the exceptions granted under Article 19 of the Constitution, which guarantees the freedom of speech.
- **No Procedural Safeguards:**
 - Section 66A did not have **procedural safeguards like other sections of the law** with similar aims, such as the need to obtain the concurrence of the Centre before action can be taken.
 - Local authorities could proceed autonomously, literally on the whim of their political masters.
- **Against the Fundamental Rights:**
 - Section 66A was **contrary to both Articles 19 (free speech) and 21 (right to life) of the Constitution.**
 - Right to know is the **species of the right to speech and expression** provided by the Article 19(1) (a) of the constitution of India.

Section 66A of the IT Act, 2000

Why in News?

Recently, the **Supreme Court** ordered States and their police forces to stop prosecuting **free speech** on social media under **Section 66A of the Information Technology Act, 2000**.

- However, the court clarified that this direction would apply only to a charge under Section 66A and not extend to other offences in a case.

What is Section 66A of the IT Act?

- **About:**
 - Section 66A of the Information Technology Act, of 2000 made it a **punishable offence for any person to send offensive information** using a computer or any other electronic device.
 - The provision also made it **punishable for a person to send information that they believed to be false**.
 - Section 66A had prescribed **three years' imprisonment** if a social media message caused “annoyance” or was found “grossly offensive”.

World Habitat Day

Why in News?

The **United Nations** has designated the **first Monday of October of every year** as **World Habitat Day** (3rd October 2022) to reflect on the state of our habitats, and on the **basic right of all to adequate shelter**.

Note:

- The Ministry of Housing and Urban Affairs (MoHUA) celebrated World Habitat Day 2022 at Vigyan Bhawan.

What is World Habitat Day?

- **About:**
 - The Day is intended to **remind the world that we all have the power and the responsibility** to shape the future of our cities and towns.
 - World Habitat Day 2022 seeks to draw attention to the **growing inequalities and vulnerabilities** that have been exacerbated by the **Triple 'C' Crises: COVID-19, Climate and Conflict.**
- **Theme of WHD 2022:**
 - “**Mind the Gap. Leave No One Behind and No Place Behind.**”
 - The theme serves a strong reminder that “**we cannot leave behind any citizen and any place as we build towards a more resilient future.**”
- **History:**
 - In 1985 the **United Nations designated the first Monday of October** every year as **World Habitat Day.**
 - World Habitat Day was **first celebrated in 1986** with the theme “**Shelter is My Right**”.
 - **Nairobi (Kenya)** was the **host city for the observance** that year.
- **Habitat Scroll of Honour Award:**
 - The Habitat Scroll of Honour Award was launched by the **United Nations Human Settlements Programme (U.N.-Habitat)** in 1989.
 - It is currently the **most prestigious human settlements award in the world.**
 - **Its aim is to acknowledge initiatives which have made outstanding contributions in various fields** such as shelter provision, highlighting the plight of the homeless, leadership in post conflict reconstruction etc.

What are Key Highlights of WHD Celebrations at Vigyan Bhawan?

- Schemes like **Pradhan Matri Awas Yojana (PMAY), PM SVANidhi scheme, Deendayal Antyodaya Yojana-National Urban Livelihood Mission (DAY-NULM), Swachh Bharat Mission** have been conceptualised with focus on vulnerable and marginalised sections.

- India will be able to make the central pledge of **Sustainable Development Goals**, i.e. ‘leave no one behind’ a reality by 2030.
- Stress on making **cities cleaner, greener and economically, socially and environmentally sustainable** for the next 25 years.

What are India's Initiatives for Urban & Rural Management?

- **Smart Cities**
- **AMRUT Mission**
- **Pradhan Mantri Garib Kalyan Yojana**
- **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005**
- **Deen Dayal Antyodaya Yojana – National Rural Livelihoods Mission (DAY-NRLM)**
- **Pradhan Mantri Gram Sadak Yojana (PMGSY)**

2nd World Geospatial Information Congress

Why in News?

Recently, 2nd United Nations World Geospatial Information Congress was inaugurated in Hyderabad under the theme '**Geo-Enabling the Global Village: No one should be left behind**'.

- India's geospatial economy is expected to cross Rs. 63,100 crores by 2025 at a growth rate of 12.8%.

What is the UN World Geospatial Information Congress?

- The first United Nations World Geospatial Information Congress was held in Deqing, Zhejiang Province, China in 2018.
- The United Nation Committee of Experts on Global Geospatial Information Management (UN-GGIM) organizes the **United Nations World Geospatial Information Congress (UNWGIC)** every four years.
- The objectives are **enhancing international collaboration** among the Member States and relevant stakeholders in Geospatial information management and capacities.

What is Geospatial Technology?

- **About:**

Note:

- Geospatial technology is a term used to **describe the range of modern tools contributing** to the geographic mapping and analysis of the Earth and human societies.
 - The term 'geospatial' refers to a collection of technologies that help to collect, analyse, store, manage, distribute, integrate, and present geographic information.
 - Broadly, it consists of the following technologies:
 - **Remote Sensing**
 - **GIS (Geographic Information System)**
 - **GNSS (Global Navigation Satellite System)**
 - **Survey**
 - **3D modelling**
- **Significance:**
- **Employment Generation:**
 - It will provide employment to more than 10 lakh people mainly through Geospatial start-ups in India.
 - **Socio-Economic Development:**
 - Geospatial technology has become one of the key enablers in socio-economic development by **enhancing productivity, ensuring sustainable infrastructure planning, effective administration, and aiding the farm sector.**
 - **Other Advantages:**
 - Other advantages include **sustainable urban development, managing and mitigating disasters, tracking the impact of climate change**, forest management, water management, stopping **desertification** and **food security**.
 - Intelligent maps and models can be created using geospatial technology.
- It can be used to reveal spatial patterns hidden in large amounts of data that are complex to access collectively through mapping.
- Geospatial technology has been driving inclusion and progress in national development projects like **SVAMITVA, PM Gati Shakti master plan, Jan Dhan-Aadhaar-Mobile (JAM) Trinity etc.**

What are the Challenges related to the Sector in India?

- **Absence of Sizeable Market:**
- Among the most prominent hurdles is the **absence of a sizable geospatial market in India.**

- There is no demand for geospatial services and products on a scale linked to India's potential and size.
 - This lack of demand is mainly a consequence of the lack of awareness among potential users in government and private sectors.

➤ **Lack of Skilled Manpower:**

- The other hurdle has been the **lack of skilled manpower across the entire pyramid.**
- Though India has many who are trained in geospatial this is mostly either through a master's level programme or on-job training.
 - Unlike the West, India lacks a strata of core professionals who understand geospatial end-to-end.

➤ **Unavailability of Data:**

- The unavailability of foundation data, especially at high-resolution, is also a constraint.
- The lack of clarity on data sharing and collaboration prevents co-creation and asset maximisation.

➤ **No-Ready-to-use Solutions:**

- Additionally, there are still no ready-to-use solutions especially built to solve the problems of India.

What are the Related Initiatives?

- **Google Street View** is launched in ten cities of India under the **Guidelines of the National Geospatial Policy (NGP), 2021.**
- The **Survey of India** has developed a **web Geographic Information System (GIS) called Sarthi.** It will help users in creating applications for geospatial data visualisation, manipulation, and analysis without a lot of resources at their end.
- The online maps portal of Survey of India has over 4,000 maps with national, state, district, and tehsil level data that have been indexed for end users.
- National Atlas and Thematic Mapping Organization (NATMO) has released thematic maps such as the cultural map of India, the climactic map, or the economic map, on Manchitran portal.
 - NATMO, functioning as a subordinate department under the Department of Science & Technology, Ministry of Science & Technology, with its headquarters at Kolkata.
- **Bhuvan**, is the national Geo-portal developed and hosted by ISRO comprising Geo Spatial Data, Services and Tools for Analysis.

Note:

- The Association of Geospatial Industries has released a report titled “**Potential of Geospatial Technologies for the Water Sector in India**”.

Quality Council of India (QCI)

Why in News?

Recently, the **Quality Council of India (QCI)** has completed the 25 years of its existence.

- The QCI has also launched a campaign, ‘**Gunvatta Se Atmanirbharta: India’s Quality Movement**’ to celebrate India’s quality hubs, create awareness about India’s landmark achievements and inform people about initiatives to enhance the quality of life of all citizens.

What is the Quality Council of India (QCI)?

- **History:**
 - Quality Council of India (QCI) was established as a National body for Accreditation in 1996.
 - Accordingly, QCI was set up through a **PPP model** as an independent autonomous organization with the support of Government of India and the Indian Industry represented by the three premier industry associations,
 - **Associated Chambers of Commerce and Industry of India (ASSOCHAM)**
 - **Confederation of Indian Industry (CII)**
 - **Federation of Indian Chambers of Commerce and Industry (FICCI)**
- **About:**
 - QCI is a **non-profit organization** registered under the Societies Registration Act XXI of 1860.
 - Nodal Ministry is the **Department of Industrial Policy and Promotion** under the Ministry of Commerce and Industry.
- **Composition:**
 - It is governed by a Council of 38 members with equal representations of government, industry and consumers.
 - Chairman of QCI is appointed by the Prime Minister on the recommendation of the industry to the government.
- **Objective:**
 - To create a mechanism for independent third-party assessment of products, services, and processes.

- It plays a **pivotal role at the national level in propagating, adoption and adherence to quality standards** in all important spheres of activities including education, healthcare, environment protection, governance, social sectors, infrastructure sector and such other areas of organized activities that have significant bearing in improving the quality of life and wellbeing of the citizens of India.

How has India’s Quality Council Contributed?

- **Transformation in the Coal Ecosystem:**
 - QCI has **brought quality consciousness into the entire coal ecosystem** and this initiative of QCI has been in the spirit of national service because it transformed the way the coal industry perceived quality.
 - Once QCI stepped in and started undertaking initiatives like third party sampling of coal, there was transformative improvement in quality in the sector.
- **Collaboration with FCI:**
 - **Food Corporation of India’s (FCI)** commitment to quality had resulted in better quality food grains reaching consumers who were mostly underprivileged.
 - The process of distribution of these food grains was now completely technologically enabled using biometrics and under **One Nation One Ration Card (ONORC)**, beneficiaries could pick up their food from anywhere in the nation.
- **One District One Product (ODOP) Initiative:**
 - QCI has also played an important role in the **One District One Product (ODOP)** initiative to encourage products from remote areas to find markets in India and abroad.
 - QCI had also **contributed significantly in the GI tagging initiative** and in completing the **Swacch Surveykshan**.

Parliament Committees

Why in News?

Recently, reorganization of 22 Standing Committees took place.

Note:

What are Committees of Parliament?

➤ **About:**

- A Parliamentary Committee is a panel of MPs that is appointed or elected by the House or nominated by the Speaker/Chairman.
- The committee works under the direction of the Speaker/chairman and it presents its report to the House or to the Speaker/chairman.
- Parliamentary Committees have their origins in the British Parliament.
- They draw their authority from Article 105 and Article 118.
 - Article 105 deals with the privileges of MPs.
 - Article 118 gives Parliament authority to make rules to regulate its procedure and conduct of business.

➤ **Need:**

- A Bill is introduced in either House of Parliament to begin legislative business but the process of lawmaking is often complex, and Parliament has limited time for detailed discussions.
- Also, the political polarisation and shrinking middle ground has been leading to increasingly rancorous and inconclusive debates in Parliament.
 - Due to these issues, a great deal of legislative business ends up taking place in the Parliamentary Committees instead.

What are the Various Committees of Parliament?

- India's Parliament has multiple types of committees. They can be differentiated on the basis of their work, their membership and the length of their tenure.
- However, broadly there are two types of Parliamentary Committees— Standing Committees and Ad Hoc Committees.
 - The Standing Committees are permanent (constituted every year or periodically) and work on a continuous basis.
 - Standing Committees can be classified into the following six categories:
 - Financial Committees
 - Departmental Standing Committees
 - Committees to Enquire

- Committees to Scrutinise and Control
- Committees Relating to the Day-to-Day Business of the House
- House-Keeping Committees or Service Committees
- While the Ad Hoc Committees are temporary and cease to exist on completion of the task assigned to them.
 - They are further subdivided into Inquiry Committees and Advisory Committees.
 - The principal Ad hoc Committees are the Select and Joint Committees on Bills.

What is the Significance of Parliamentary Committees?

➤ **Provides Legislative Expertise:**

- Most MPs are not subject matter experts on the topics being discussed — they are generalists who understand the pulse of the people but rely on advice from experts and stakeholders before making decisions.
- Parliamentary committees are meant to help MPs seek expertise and give them time to think about issues in detail.

➤ **Acting as a Mini-Parliament:**

- These committees act as a mini-parliament, as they have MPs representing different parties are elected into them through a system of the single transferable vote, in roughly the same proportion as their strength in Parliament.

➤ **Instrument for Detailed Scrutiny:**

- When bills are referred to these committees, they are examined closely and inputs are sought from various external stakeholders, including the public.

➤ **Provides a Check on the Government:**

- Although committee recommendations are not binding on the government, their reports create a public record of the consultations that took place and put pressure on the government to reconsider its stand on debatable provisions.
- By virtue of being closed-door and away from the public eye, discussions in committee meetings are also more collaborative, with MPs feeling less pressured to posture for media galleries.

Note:

Why is the Sidelining of the Parliamentary Committees an Issue?

- **Weakening of Parliamentary System Government:**
 - A parliamentary democracy works on the doctrine of fusion of powers between parliament and the executive, but the Parliament is supposed to maintain oversight of the government and keep its power in check.
 - Thus, by circumventing the Parliamentary committees in the passing of significant legislation, there is a risk of weakening democracy.
- **Enforcing Brute Majority:**
 - In the Indian system, it is not mandatory for bills to be sent to committees. It's left to the discretion of the Chair — the Speaker in the Lok Sabha and Chairperson in the Rajya Sabha.
 - By giving discretionary power to the Chair, the system has been specially rendered weak in a Lok Sabha where the ruling party has a brute majority.

India-made Syrups and Deaths in Gambia

Why in News?

Recently, the **World Health Organisation (WHO)** issued an alert about four **Indian-manufactured cough syrups, which are** said to be linked to acute kidney injury in children and 66 deaths in the small West African nation of The Gambia.

- The WHO analysis of samples of each of these products had confirmed the presence of “**unacceptable amounts of diethylene glycol and ethylene glycol as contaminants**”. These ingredients are not allowed in food or drugs, as they **can cause abdominal pain, vomiting, diarrhoea, headache, severe renal injury and neurological toxicity**.
- The company said these were not sold in India and are only for export markets already approved by the DGCI.

What are the Related Regulations in India?

- **The Drugs and Cosmetics Act:**
 - **The Drugs and Cosmetics Act, 1940** and Rules 1945 have entrusted various responsibilities to central and state regulators for regulation of drugs and cosmetics.

Decoding the regulatory norms

Who can export drugs from India?

Any manufacturer with a certification from the Central Drugs Standard Control Organisation (CDSCO) – the apex regulatory body for cosmetics, pharmaceuticals and medical devices.

Do drugs manufactured in India for export need to be tested domestically?

At the time of issuing license, drugs inspectors assigned by the Indian regulator may lift samples in any phase of manufacturing for quality checks. It is, however, not mandatory and rarely done.

What safety norms need to be adhered to?

First point of testing is at a manufacturer's level, to ensure that the drug adheres to the safety norms prescribed by the Indian Pharmacopoeia, and the regulatory requirement of the country of export. However, generally speaking, destination countries expect nations of origin to strictly follow the norms prescribed by the pharmacopoeia under which the sale is governed.

What are the int'l drug safety norms?

Drug regulatory norms are usually country-specific and are enforced at the level of individual countries. The US, Japanese, British, European and Chinese pharmacopoeias act as reference points for uniform preparation for the most commonly used drugs – with tests to ensure their quality, potency and purity. The WHO's prequalification programme is another criterion wherein the UN body certifies sale of drugs/vaccines under the UN programmes.

Are destination nations responsible for safety?

Some countries do internal testing at the point of entry, but it is not mandatory and varies by the country.



For sale domestically

What are the checks in place to ensure the safety of drugs in India?

The CDSCO and state drugs regulators are responsible for ensuring quality of drugs that are manufactured, sold or distributed in Indian markets.



Maiden Pharma controversies

KERALA: Maiden Pharmaceuticals' drugs – Metomin, Easiprin, and Maical-D – were lifted from the markets after they were found to be substandard

BIHAR: The state health department blacklisted the firm for 5 years in 2011 after six batches of two of its drugs were found "not of standard quality"

- It provides the regulatory guidelines for issuing licenses to manufacture Ayurvedic, Siddha, Unani medicines.
- It is mandatory for the manufacturers to adhere to the prescribed requirements for licensing of manufacturing units & medicines including proof of safety & effectiveness, compliance with the **Good Manufacturing Practices (GMP)**.
- **Central Drugs Standard Control Organisation(CDSCO):**
 - Prescribes standards and measures for ensuring the safety, efficacy and quality of drugs, cosmetics, diagnostics and devices in the country.
 - Regulates the market authorization of new drugs and clinical trials standards.
 - Supervises drug imports and approves licences to manufacture the above-mentioned products.
 - **CDSCO regulates export** of drugs in India, any manufacturer with the certification from CDSCO can export drugs outside India.
- **Drugs Controller General of India:**
 - DCGI is the head of department of the CDSCO of the Government of India responsible for approval of licences of specified categories of drugs such as blood and blood products, IV fluids, vaccines and sera in India.

Note:

- DCGI also sets **standards for manufacturing, sales, import**, and distribution of drugs in India.

Digital Services Act (DSA): EU

Why in News?

The **European Union (EU)** has given **final approval** to online safety-focused legislation called **Digital Services Act (DSA)**, which is an overhaul of the region's social media and e-commerce rules.

What is the Digital Services Act?

➤ About:

- As defined by the EU Commission, the DSA is "a set of common rules on intermediaries' obligations and accountability across the single market", and ensures higher protection to all EU users, irrespective of their country.

➤ Objective:

- The DSA will tightly regulate the way intermediaries, especially large platforms such as Google, Facebook, and YouTube, function when it comes to moderating user content.

What are the Features of the Digital Services Act?

➤ Faster Removals and Provisions to Challenge:

- As part of the overhaul, social media companies will have to add "**new procedures for faster removal**" of content deemed illegal or harmful.
- They will also **have to explain to users how their content takedown policy works**.
- The DSA also **allows users to challenge takedown decisions** taken by platforms and seek out-of-court settlements.

➤ Bigger Platforms have Greater Responsibility:

- The law **avoids a one-size fits all approach** and places increased accountability on the Big Tech companies.
- Under the DSA, '**Very Large Online Platforms (VLOPs)**' and '**Very Large Online Search Engines (VLOSEs)**', that is platforms, having more than 45 million users in the EU, will have more stringent requirements.

➤ Direct Supervision by the European Commission:

- The **European Commission will be responsible for centrally supervising** these requirements and their enforcement.

➤ More Transparency on how Algorithms Work:

- VLOPs and VLOSEs will face transparency measures and scrutiny of how their algorithms work.
- These platforms will be required to conduct systemic risk analysis and reduction to drive accountability about the society impacts of their products.
- VLOPs must allow regulators to access their data to assess compliance and let researchers access their data to identify systemic risks of illegal or harmful content.

➤ Clearer Identifiers for ads and who's Paying for them:

- Online platforms must ensure that users can easily identify advertisements and understand who presents or pays for the advertisement.
- They must not display personalised advertising directed towards minors or based on sensitive personal data.

How does the EU's DSA compare with India's Online Laws?

➤ Information Technology Rules, 2021 (IT Rules):

○ About:

- In February 2021, India had notified extensive changes to its social media regulations in the form of the **Information Technology Rules, 2021 (IT Rules)** which placed significant due diligence requirements on large social media platforms such as Meta and Twitter.
- These included appointing key personnel to handle law enforcement requests and user grievances, enabling identification of the first originator of the information on its platform under certain conditions, and deploying technology-based measures on a best-effort basis to identify certain types of content.
- One of the most contentious proposals is the creation of government-backed grievance appellate committees which would have the authority to review and revoke content moderation decisions taken by platforms.

○ Objection to the Law:

- Social media companies have objected to some of the provisions in the IT Rules, and WhatsApp has filed a case against a requirement which

Note:

- mandates it to trace the first originator of a message.
- One of the reasons that the platform may be required to trace the originator is if a user has shared child sexual abuse material on its platform.
 - WhatsApp has, however, alleged that the requirement will dilute the encryption security on its platform and could compromise personal messages of millions of Indians.
- **IT Act, 2000:**
- India is also working on a complete overhaul of its technology policies and is expected to soon come out with a replacement of its **IT Act, 2000**.
 - It is expected to look at ensuring net neutrality and algorithmic accountability of social media platforms among other things.

Right to Information (RTI) Act

Why in News?

According to a report, the backlog of appeals or complaints under the **Right to Information (RTI)** Act is steadily increasing in Information Commissions every year.

What are the Findings of the Report?

- **Pendency of Cases:**
- At present, nearly 3.15 lakh complaints or appeals pending with 26 information commissions across India.
 - The number of appeals and complaints pending in 2019 was 2,18,347 which increased to 3,14,323 in 2022.
 - The highest number of pending cases were in Maharashtra followed by Uttar Pradesh, Karnataka, etc.
- **Defunct Information Commissions:**
- Two out of 29 information commissions across the country are completely defunct, four of them headless at the moment, and only 5% of the positions are occupied by women.
 - Jharkhand and Tripura have been completely defuncted for 29 months and 15 months respectively. Manipur, Telangana, West Bengal and Andhra Pradesh are without chiefs.

Note:

➤ Not Imposing Penalties:

- The commissions did not impose penalties in 95% of the cases where penalties were potentially imposable.

➤ Tardy Disposal of Cases:

- The report also flags concerns regarding **tardy disposal rates** in several commissions and the lack of transparency in their functioning.

➤ e-filing facility for RTI Applications:

- Only 11 information commissions out of 29 provide e-filing facility for RTI applications or appeals, but only five are functional.

What is the Right to Information (RTI) Act?

➤ About:

- The Right to Information Act 2005 mandates timely response to citizen requests for government information.
- The basic object of the Right to Information Act is to empower the citizens, **promote transparency and accountability** in the working of the Government, contain corruption, and make our democracy work for the people in a real sense.

➤ Right to Information (Amendment) Act, 2019:

- It provided that the **Chief Information Commissioner and an Information Commissioner** (of Centre as well as States) shall hold office for such term as prescribed by the Central Government. Before this amendment, their term was fixed for 5 years.
- It provided that the **salary, allowances and other service conditions of the Chief Information Commissioner and an Information Commissioner** (of Centre as well as States) shall be such as prescribed by the Central Government.
 - Before this amendment, the salary, allowances and other service conditions of the Chief Information Commissioner were similar to those of the Chief Election Commissioner and that of an Information Commissioner were similar to those of an Election Commissioner (State Election Commissioners in case of States).
- It removed the provisions regarding deductions in salary of the Chief Information Commissioner, an Information Commissioner, the State Chief Information Commissioner and a State Information Commissioner due to pension or any other retirement benefits received by them for their previous government service.

- The **RTI (Amendment) Act, 2019** was criticized on grounds of diluting the law and giving more powers to the central government.
- **Issues in the Implementation:**
 - Non-compliance in proactive disclosure by public authorities
 - Hostile approach of **Public Information Officers** (PIOs) towards citizens and misinterpreting provisions of the Right to Information (RTI) Act to conceal information.
 - Lack of clarity on what public interest is and right to privacy
 - Lack of political will and poor infrastructure
 - Rejection of information requests made by active citizens on important matters of public importance
 - Covert means of attacks and threats against RTI activists and applicants to suppress their voices

What is the Central Information Commission?

- **Established:** The Central Information Commission was established by the Central Government in 2005, under the provisions of the Right to Information Act (2005). It is **not a constitutional body**.
- **Members:** The Commission consists of a Chief Information Commissioner and not more than ten Information Commissioners.
- **Appointment:** They are appointed by the President on the recommendation of a committee consisting of the Prime Minister as Chairperson, the Leader of Opposition in the Lok Sabha and a Union Cabinet Minister nominated by the Prime Minister.
- **Tenure:** The Chief Information Commissioner and an Information Commissioner shall hold office for such term as prescribed by the Central Government or until they attain the age of 65 years, whichever is earlier.
 - They are **not eligible for reappointment**.
- **Power and Functions of CIC:**
 - It is the duty of the Commission to receive and inquire into a complaint from any person regarding information requested under RTI, 2005.
 - The Commission can order an inquiry into any matter if there are reasonable grounds (suo-moto power).
 - While inquiring, the Commission has the powers of a civil court in respect of summoning, requiring documents etc.

Note:

The Places of Worship Act

Why in news?

Solicitor General told the Supreme Court that the validity of the Places of Worship Act, 1991, "may not be covered" by the opinion of its five-judge Constitution bench in the Ayodhya case.

What is the Places of Worship Act?

- **About:** It is described as "An Act to prohibit conversion of any place of worship and to provide for the maintenance of the religious character of any place of worship as it existed on the 15th day of August 1947, and for matters connected therewith or incidental thereto."
- **Exemption:**
 - The disputed site at Ayodhya was exempted from the Act. Due to this exemption, the trial in the Ayodhya case proceeded even after the enforcement of this law.
 - Besides the Ayodhya dispute, the Act also exempted:
 - Any place of worship which is an ancient and historical monument, or an archaeological site covered by the **Ancient Monuments and Archaeological Sites and Remains Act, 1958**.
 - A suit that has been finally settled or disposed of.
 - Any dispute that has been settled by the parties or conversion of any place that took place by acquiescence before the Act commenced.
- **Penalty:**
 - Section 6 of the Act prescribes a punishment of a maximum of three years imprisonment along with a fine for contravening the provisions of the Act.
- **Criticism:**
 - The law has been challenged on the ground that it **bars judicial review**, which is a basic feature of the Constitution, imposes an "arbitrary irrational retrospective cutoff date," and abridges the right to religion of Hindus, Jains, Buddhists, and Sikhs.
 - **Violates the Principle of Secularism:** It bars the power of remedy of judicial review which is a basic feature of the Constitution and is therefore outside the legislative competence of Parliament.

- The result is that Hindu devotees cannot raise their grievance by instituting any suit in Civil Court or invoking the jurisdiction of the Hon'ble High Court under Article 226 of the Constitution of India against high handedness of ultras and will not be able to restore back the religious character of Hindu Endowments, Temples, Mutts etc from hoodlums if they had encroached upon such property before 15th August 1947 and such illegal and barbarian act will continue in perpetuity,
- The Act had kept out the land which was the subject matter of the Ayodhya dispute from its purview.

What are the Provisions of the Places of Worship Act?

- **Section 3:** This bars the conversion, in full or part, of a place of worship of any religious denomination into a place of worship of a different religious denomination or even a different segment of the same religious denomination.
- **Section 4(1):** It declares that the **religious character of a place of worship "shall continue to be the same as it existed"** on 15th August 1947.
- **Section 4(2):** It says any suit or legal proceeding with respect to the conversion of the religious character of any place of worship existing on 15th August, 1947, pending before any court, shall abate and no fresh suit or legal proceedings shall be instituted.
 - The proviso to this subsection saves suits, appeals, and legal proceedings that are pending on the date of commencement of the Act if they pertain to the conversion of the religious character of a place of worship after the cut-off date.
- **Section 5:** It stipulates that the Act shall not apply to the Ramjanmabhoomi-Babri Masjid case, and to any suit, appeal, or proceeding relating to it.

What was the Supreme Court's view during Ayodhya Judgement?

- In the 2019 Ayodhya verdict, the Constitution Bench referred to the law and said it manifests the secular values of the Constitution and prohibits retrogression.
- The law is hence a legislative instrument designed to protect the secular features of the Indian polity, which is one of the basic features of the Constitution.

Note:

Revenue Deficit Grants

Why in News?

Recently, the Ministry of Finance released the monthly installment of revenue deficit grant of Rs. 7,183 crore to 14 States.

What is the Post Devolution Revenue Deficit (PDRD)?

- **About:**
 - The Centre provides the **Post Devolution Revenue Deficit (PDRD) Grant** to the States under **Article 275 of the Indian Constitution**.
 - Article 275 provides for the payment of the sums as Parliament may by law provide as grants-in aid to the States in need of assistance.
 - The grants are paid out of the **Consolidated Fund of India in each year**, and different sums may be fixed for different States.
 - These grants are to be of the nature of capital and recurring sums as may be necessary.
- **Objective:**
 - These grants aim to enable the states to meet the cost of state level welfare schemes or to improve the level of administration of scheduled areas.
 - Grants are **primarily intended to correct Inter-State disparities in financial resources** and to coordinate the maintenance and expansion of the welfare schemes of the State Governments on a uniform national level.
- **Recommendation for Grants:**
 - The grants are released as per the **recommendations of the Finance Commission** in monthly installments **to meet the gap in Revenue Accounts of the States post-devolution** (of the divisible tax pool of the Centre).
 - The **15th Finance Commission (FC)** has recommended **post devolution revenue deficit grants** amounting to about Rs. 3 trillion over the five-year period ending FY26.
 - The eligibility of States to receive this grant and the quantum of grant was **decided by the Commission** based on the gap between assessment of revenue and expenditure of the State.

- The States who have been recommended for PDRD Grant by the 15th FC during 2022-23 are: Andhra Pradesh, Assam, Himachal Pradesh, Kerala, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Rajasthan, Sikkim, Tripura, Uttarakhand and West Bengal.

How are Center State Financial Relations governed by the Constitution?

- Constitutional Provisions:**
 - The Indian Constitution has **made elaborate provisions, relating to the distribution of the taxes as well as non-tax revenues** and the power of borrowing, supplemented by provisions for grants-in-aid by the Union to the States.
 - Article 268 to 293 in Part XII** deals with the provisions of financial relations between Centre and States.
- Taxing Powers:** The Constitution divides the taxing powers between the Centre and the states as follows:
 - The **Parliament has exclusive power to levy taxes on subjects enumerated in the Union List**, the state legislature has exclusive power to levy taxes on subjects enumerated in the State List.
 - Both can levy taxes on the subjects enumerated in Concurrent List** whereas residuary power of taxation lies with Parliament only.
- Distribution of the Tax Revenue:**
 - Article 268:**
 - It provides for the **duties levied by the union but collected and appropriated by the states**.
 - It includes stamp duties on bills of exchange, cheques, etc.
 - Article 269:**
 - It includes **taxes Levied as well as Collected by the Union but Assigned to the States**.
 - These include taxes on the sale and purchase of goods (other than newspapers) in the course of inter-state trade or commerce or the taxes on the consignment of goods in the course of inter-state trade or commerce.
 - Article 269-A:**
 - It provides for **Levy and Collection of Goods and Services Tax (GST)** in the course of inter-state trade or commerce.
 - The GST on supplies during such trade is **levied and collected by the Centre**.

- But this tax is divided between the Centre and the States in the manner provided by Parliament on the recommendations of the GST Council.

o Article 270:

- It includes **Taxes Levied and Collected by the Union but Distributed between the Union and the States**.
- It includes all taxes and duties referred to in the Union List except the following:
 - Duties and taxes referred to in Articles 268, 269 and 269-A.
 - Surcharge on taxes and duties referred to in Article 271 (this goes to the Centre exclusively).
 - Any cess levied for specific purposes.

- Grants-in-Aid:** Besides sharing of taxes between the Centre and the States, the Constitution provides for Grants-in-aid to the States from the Central resources. There are two types of grants:

- Statutory Grants (Article 275):** These grants are **given by the Parliament out of the Consolidated Fund of India** to the states in need of assistance. Different States may be granted different sums.
- Discretionary Grants (Article 282):** It empowers both the Centre and the states to make any grants for any public purpose, even if it is not within their respective legislative competence.
 - Under this provision, the Centre makes grants to the states. These grants are known as discretionary grants, the reason being that the Centre is under no obligation to give these grants and the matter lies within its discretion.
 - These grants have a two-fold purpose:** to help the state financially to fulfil plan targets; and to give some leverage to the Centre to influence and coordinate state action to effectuate the national plan.

Multi-State Cooperatives

Why in News

The Union Cabinet has approved the Multi-State Cooperative Societies (MSCS) Amendment Bill, 2022, which seeks to amend the Multi-State Cooperative Societies Act, 2002

Note:

- A new Ministry of Cooperation was formed in July 2021 with an objective to provide renewed impetus to the growth of Cooperative Sector.

What are the Changes Proposed in the Bill?

- The amendments seek to improve ease of doing business, bringing greater transparency and enhance governance.
- It has included provisions relating to **representation of women and Scheduled Caste/Scheduled Tribe members on the board** of multi-state cooperative societies.
- The amendments have been brought to **reform the electoral process**, strengthen monitoring mechanisms and enhance accountability.
- It will also **widen the composition of board and ensure financial discipline**, besides enabling the multi-state cooperative societies to raise funds.
- To improve the governance of multi-state cooperative societies, the Bill has specific provisions for setting up of **Cooperative Election Authority, Cooperative Information Officer and Cooperative Ombudsman**.
- There will also be a **provision for issuing non-voting shares** in multi-state co-operative societies to help them raise funds.
- Further, the newly proposed **Rehabilitation, Reconstruction & Development Fund** will help in revitalising sick co-operative societies.
- The Bill will incorporate the provisions of the **97th Constitutional Amendment**.
- Moreover, the provision for stipulating prudential norms will bring in financial discipline. The amendments relating to auditing mechanism will ensure more accountability.

What are the Key Points of MSCS Act, 2002?

- **About:**
 - **Multi State Cooperative Societies:** Although Cooperatives is a state subject, there are many societies such as those for sugar and milk, banks, milk unions etc whose members and areas of operation are spread across more than one state.
 - For example, most sugar mills along the districts on the Karnataka-Maharashtra border procure cane from both states.
 - Maharashtra has the highest number of such cooperative societies at 567, followed by Uttar Pradesh (147) and New Delhi (133).

- The MSCS Act was passed to govern such cooperatives.
- **Legal Jurisdiction:** Their board of directors has representation from all states they operate in.
 - Administrative and financial control of these societies is with the central registrar, with the law making it clear that no state government official can wield any control on them.
 - The exclusive control of the central registrar was meant to allow smooth functioning of these societies, without interference of state authorities.

Associated Concerns:

- **Lack of Checks and Balances:** While the system for state-registered societies includes checks and balances at multiple layers to ensure transparency in the process, these layers do not exist in the case of multi state societies.
 - The central registrar can only allow inspection of the societies under special conditions.
 - Further, inspections can happen only after prior intimation to societies.
- **Weak Institutional Infrastructure of Central Registrar:** The on-ground infrastructure for central registrar is thin — there are no officers or offices at state level, with most work being carried out either online or through correspondence.
 - Due to this, the grievance redressal mechanism has become very poor.
 - This has led to several instances when credit societies have launched ponzi schemes taking advantage of these loopholes.

What are Cooperatives in India?

- **Definition:**
 - The International Cooperative Alliance (ICA) defines a **Cooperative** as “an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise.”
 - Examples of Successful Cooperatives in India:
 - **National Agricultural Cooperative Marketing Federation of India (NAFED),**
 - **Indian Farmers Fertilisers Cooperative Limited (IFFCO)**
 - AMUL

Note:

➤ **Constitutional Provisions:**

- The **Constitution (97th Amendment) Act, 2011** added a new Part IXB regarding the cooperatives working in India.
 - The word “cooperatives” was added after “unions and associations” in Article 19(1)(c) under Part III of the Constitution.
 - This enables all the citizens to form cooperatives by giving it the status of **fundamental right** of citizens.
 - A new Article 43B was added in the **Directive Principles of State Policy** (Part IV) regarding the “promotion of cooperative societies”.

➤ **Supreme Court Judgement:**

- In July, 2021, the Supreme Court struck down certain provisions of the **97th Amendment Act, 2011**.
 - As per the SC, Part IX B (Articles 243ZH to 243ZT) has “significantly and substantially impacted” State legislatures’ “exclusive legislative power” over its co-operative sector.
 - Also, the provisions in the 97th Amendment were passed by Parliament without getting them ratified by State legislatures as required by the Constitution.
 - The SC held that states have exclusive power to legislate on topics reserved exclusively to them (cooperatives are a part of State list).
 - The 97th Constitutional Amendment required ratification by at least one-half of the state legislatures as per Article 368(2).
 - Since the ratification was not done in the case of the 97th amendment, it was liable to strike it down.
 - It upheld the validity of the provisions of Part IX B which are related to Multi State Cooperative Societies (MSCS).
 - It said that in case of MSCS with objects not confined to one state, the legislative power would be that of the Union of India.

Democratic Decentralisation in India

Why in News?

- It has been almost 30 years since the **73rd and 74th constitutional amendment Acts were passed** to facilitate democratic decentralisation in India, but

very little and actual progress has been made in this direction.

What is Democratic Decentralisation?

➤ **About:**

- Democratic decentralisation is the **process of devolving the functions and resources of the state from the Centre to the elected representatives** at the lower levels so as to facilitate greater direct participation of citizens in governance.
- Devolution, envisioned by the Indian Constitution, is not mere delegation.
 - It implies that **precisely defined governance functions are formally assigned by law to local governments**, backed by adequate transfer of a basket of financial grants and tax handles, and they are given staff so that they have the necessary wherewithal to carry out their responsibilities.

➤ **Related Constitutional Provisions:**

- Local government, including panchayats, is a **state subject in the Constitution**, and consequently, the devolution of power and authority to panchayats has been left to the discretion of states.
- The **Constitution mandates that panchayats and municipalities shall be elected every five years** and enjoins States to devolve functions and responsibilities to them through law.
- The **73rd and 74th Amendments**, by constitutionally establishing **Panchayati Raj Institutions (PRIs)** in India, mandated the establishment of panchayats and municipalities as elected local governments.
 - These amendments added two new parts to the Constitution, namely, Part IX titled “The Panchayats” (added by 73rd Amendment) and Part IXA titled “The Municipalities” (added by 74th Amendment).
- The **11th Schedule** contains the powers, authority and responsibilities of Panchayats.
- The **12th Schedule** contains the powers, authority and responsibilities of Municipalities.
- **Article 40:** Organization of a village panchayat

What are the Major Achievements of the Local Bodies?

➤ **Rising Women Representation:**

Note:

- The proportion of elected women representatives has been steadily rising since the enactment of the 73rd Amendment Act.
 - Currently, India has 260,512 Panchayats with 3.1 million elected representatives, of which a record 1.3 million are women.
 - While there is merely 7–8% representation in Parliament and State Assemblies for women, an astounding 49% of elected local representatives (in states like Odisha it has crossed 50%) are women.
- **Created Healthy Competition among Various States:**
- The passage of the 73rd and 74th Amendments has created healthy competition among various states regarding devolution (the 3Fs: funds, functions, and functionaries).
 - **For instance:**
 - Kerala has devolved 29 of its functions to Panchayats.
 - Rajasthan took the inspiration from Kerala to devolve many key departments such as health, education, women, and agriculture to PRIs.
 - Similarly, Bihar came out with the idea of “Panchayat Sarkar” and states such as Odisha have increased 50% seats for women

What are the Issues with Local Governments in India?

- **Insufficient Funding:** The money given to the local governments is inadequate to meet their basic requirements.
- A number of conditions constrain the use of money, including inflexibility in spending the allocated budget.
 - There is little investment in enabling and strengthening local governments to raise their own taxes and user charges.
- **Infrastructural Challenges:**

- Some of the Gram Panchayats (GPs) do not have their own building and they share space with schools, Anganwadi centres and other places.
 - Some have their own building but without basic facilities like toilets, drinking water, and electricity connection.
 - While GPs have internet connections, they are not functional in many cases. For any data entry purposes, panchayat officials have to visit Block Development offices which delay the work.
- **Lack of Staff:**
- Local governments do not have the staff to perform even basic tasks.
 - Furthermore, as most staff are hired by higher level departments and placed with local governments on deputation, they do not feel responsible to the latter; they function as part of a vertically integrated departmental system.
- **Untimely and Delayed Elections:**
- States often postpone the elections and violate the constitutional mandate of five yearly elections to local governments.
- **Downgraded Role of Local Government:**
- Local governments are merely acting as an implementation machinery rather than a policy-making body for local development. Technology-enabled schemes have further downgraded their role.
- **Corruption:**
- Criminal elements and contractors are attracted to local government elections, tempted by the large sums of money now flowing to them. Thus, forming a market chain of corruption operates, involving a partnership between elected representatives and officials at all levels.
 - However, there is no evidence to show that corruption has increased due to decentralisation.



Note:

Economic Scenario

Highlights

- Purple Revolution
- Credit Guarantee Scheme for Startups (CGSS)
- Online Gaming Market in India
- Prime Minister's Development Initiative for North East Region (PM-DevINE)
- India's First 24x7 Solar-Powered Village
- Transforming Agrifood Systems with Forests
- UNESCO Lists 50 Iconic Textile Crafts
- Global Innovation Index 2022
- Telecom Technology Development Fund (TTDF) Scheme
- Sustainable Finance
- Tokenisation of Cards in India
- Proposed Digital Rupee
- Decline in Forex Reserves
- World Economic Outlook: IMF
- India Becomes the World's Largest Producer of Sugar
- OPEC+ Cuts Oil Production
- Nobel Prize in Economic Sciences 2022
- Railways to Bid for 16 Stations Through PPP Model
- International Migration Outlook 2022
- 4th Heli-India Summit 2022

Purple Revolution

Why in News?

Recently, the Union State Minister for Science and Technology stated that the **Purple Revolution** offers attractive StartUp avenues.

➤ The Ministry of Science and Technology initiated the **Purple Revolution or Lavender Revolution** in 2016 through the **Aroma Mission** of the **Council of Scientific and Industrial Research (CSIR)**.

What is Purple Revolution?

➤ About:

- It aims to promote the indigenous aromatic crop-based agro-economy by shifting from foreign aromatics to homegrown kinds.
- First-time producers were offered **free lavender seedlings** as part of the goal, and those who had previously produced lavender were paid Rs. 5-6 per plant.
- The CSIR-Aroma Indian Institute of Integrative Medicine (IIIM)'s Initiative have begun lavender cultivation in the Ramban district of Jammu and Kashmir.
- Lavender farming is done in nearly all of Jammu and Kashmir's 20 districts.

● Particularly, the districts of Kathua, Udhampur, Doda, Kishtwar, Rajouri, Srinagar, Bandipora, Budgam, Ganderbal, Anantnag, Kullu, Baramulla etc. have made huge progress in this direction.

➤ Products:

- The main product is **Lavender oil** which sells for at least Rs. 10,000 per litre
- Lavender water, which separates from lavender oil, is used to make **incense sticks**.
- **Hydrosol**, which is formed after distillation from the flowers, is used to make soaps and room fresheners.

➤ Significance:

- It is significant since it aligns with the government's objective of **doubling agricultural earnings by 2022**.
- It would provide a **livelihood for aspiring farmers and agri-entrepreneurs**, as well as **strengthen the Start-Up India programme** and encourage an entrepreneurial spirit in the region.
- Over 500 young people benefited from the purple revolution, which eventually led to the doubling of their income.
- Agricultural development is one of the most powerful tools to end economic constraints, boost shared prosperity and **feed a projected 9.7 billion people by 2050**.

Note:

What is Aroma Mission?

- The CSIR Aroma Mission aims to bring about **transformational change in the aroma sector** by implementing targeted interventions in agricultural, processing, and product development in order to boost the aroma industry's growth and rural employment.
- It will encourage the development of aromatic crops for the **production of essential oils**, which are in high demand in the aroma sector.
- It is anticipated that Indian farmers and the aroma business will be able to become worldwide leaders in the production and export of various essential oils in the menthol mint pattern.
- Aroma Mission is drawing entrepreneurs and farmers from all across the country. CSIR assisted in the **cultivation of 6000 hectares of land in 46 Aspirational districts** across the country during Phase I.
- In addition, almost 44,000 employees were trained. The CSIR has started Phase II of the Aroma Mission, which will include over 45,000 skilled human resources and help over 75,000 farming families.

Credit Guarantee Scheme for Startups (CGSS)

Why in News?

Recently, the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry has notified the **credit guarantee scheme for start-ups**.

What is the Credit Guarantee Scheme for Startups (CGSS)?

- **About:**
 - The scheme has been **approved for the purpose of providing credit guarantees** to loans extended by Member Institutions (MIs) to finance eligible borrowers being startups.
 - MIs include **financial intermediaries** (banks, financial institutions, **Non-Banking Financial Companies**) engaged in lending/investing and conforming to the eligibility criteria approved under the Scheme.
 - This scheme **would help provide the much-needed collateral-free debt** funding to start-ups.

Note:

- The credit guarantee cover under the Scheme would be **transaction based and umbrella based**.
- The exposure to individual cases would be **capped at Rs. 10 crore per case** or the actual outstanding credit amount, whichever is less.
- In respect of **transaction-based guarantee cover**, the guarantee cover is obtained by the MIs on a single eligible borrower basis.
 - Transaction based guarantees will promote lending by Banks/ NBFCs to eligible startups.
- The umbrella-based guarantee cover will provide guarantee to Venture Debt Funds (VDF) registered under Alternative Investment Funds (AIF) regulations of **Securities and Exchange Board of India (SEBI)**.
- **Aim:**
 - To **support startups that are hit hard by the pandemic** and are now going to be impacted further by the rising interest rate scenario when liquidity is unlikely to be easily available to new entrepreneurs.

What is the State of Start-ups in India?

- **About:**
 - India has become the **3rd largest start-up ecosystem** in the world after the US and China.
 - India is home to as many as 75,000 Startups.
 - 49% of start-ups are from tier-2 and tier-3 cities.
 - There are currently 105 unicorns, out of which 44 were born in 2021 and 19 in 2022.
 - Startups are also emerging in the fields like **IT, agriculture, aviation, education, energy, health and space sectors**.
- **Related Initiatives:**
 - **National Initiative for Developing and Harnessing Innovations (NIDHI)**
 - **Startup India Action Plan (SIAP)**
 - **Ranking of States on Support to Startup Ecosystems (RSSSE)**
 - **Fund of Funds for Startups (FFS)**

Online Gaming Market in India

Why in News?

A task force set up by the Ministry of Electronics and Information Technology (MeitY) has prepared a **final**

report of its recommendations to regulate the online gaming industry in India.

What are the Recommendations of the Task Force?

- **Central-Level Law for Online Gaming:**
 - A central-level law for online gaming **should apply to real money and free games of skill**, including e-sports, online fantasy sports contests, and card games among others.
 - Casual games with no real money element in the form of stakes may be kept outside the scope of such rules, unless they have a high number of users in India.
- **A Regulatory Body for the Online Gaming Industry:**
 - It has also **recommended creating a regulatory body for the online gaming industry**.
 - The body will **determine what qualifies as a game of skill or chance**, and accordingly certify different gaming formats, seek compliance and enforcement.
 - A “game of skill” is **based mainly on the mental or physical level of expertise** of a player, rather than a chance.
 - A “game of chance” however is determined **mainly by a random factor of any type**. In games of chance, the usage of skill is present but a higher level of chance determines success.
- **Three-Tier Dispute Resolution Mechanism:**
 - A three-tier dispute resolution mechanism, similar to that prescribed under the **Information Technology Rules, 2021** for online streaming services, consisting of:
 - A grievance redressal system at the gaming platform level,
 - Self-regulatory body of the industry, and
 - An oversight committee led by the government.
- **Online Gaming Platform as a Legal Entity:**
 - Any online gaming platform (domestic or foreign) offering real money online games to Indian users will need to be a legal entity incorporated under Indian law.
 - These platforms will also be treated as ‘**reporting entities**’ under the **Prevention of Money Laundering Act, 2002**.
 - These platforms will also be required to **report suspicious transactions to the Financial Intelligence Unit-India**.

Regulation of the Sector:

○ By MeitY:

- MeitY may act as the nodal ministry to regulate **online gaming**, except for the e-sports category on which the Department of Sports can take the lead.
- The scope of the regulation by MeitY should **only cover online gaming, that is, games of skill**.
- The issues of online betting and gambling being games of chance in nature should be excluded from its scope, the task force is learnt to have recommended.

○ By Information and Broadcasting Ministry:

- Certain other aspects of online gaming such as advertisements, code of ethics relating to content classifications etc. could be regulated by the Information and Broadcasting Ministry.

○ Consumer Affairs Ministry:

- The Consumer Affairs Ministry can regulate the sector for unfair trade practices.

What is the Purpose of a Law at the Central Level?

➤ Online Gaming being a State Subject:

- Online gaming so far has been a state subject, but according to the state governments, they find it **extremely difficult to enforce certain rules** like geo-blocking certain apps or websites within the territory of their state.
- Also, there is a concern that **rules passed in one state are not applicable in another**, which has caused inconsistency in how the online gaming industry is regulated in the country.
- State governments **also do not have enough blocking powers like the Centre** to issue blocking orders for offshore betting sites.

➤ Societal Concerns:

- A number of **societal concerns** that can arise from the **proliferation of online games** in the country has also been highlighted.
- There have been a **number of reported incidents of people losing large sums of money on online games**, leading to suicides in various parts of the country.

➤ No Regulatory Framework:

Note:

- Along with that, **there is currently no regulatory framework to govern various aspects of online gaming** companies such as having a grievance redressal mechanism, implementing player protection measures, protection of data and intellectual property rights, and prohibiting misleading advertisements.

What is the Size of India's Online Gaming Market?

➤ Revenue and Industry Growth:

- The revenue of the Indian mobile gaming industry is **expected to exceed USD1.5 billion in 2022**, and is estimated to reach USD 5 billion in 2025.
- The industry in the **country grew at a CAGR of 38%** between 2017-2020, as opposed to 8% in China and 10% in the US.
 - It is expected to grow at a **CAGR of 15%** to reach Rs 153 billion in revenue by 2024.

➤ Users Growth:

- India's percentage of New Paying Users (NPUs) in gaming has been the fastest growing in the world for two consecutive years, **at 40% in 2020 and reaching 50% in 2021**.
- According to a report by EY FICCI (Federation of Indian Chambers of Commerce and Industry), transaction-based games' revenues grew 26% in India, with the number of paying gamers increasing by 17% from 80 million in 2020 to 95 million in 2021.

Prime Minister's Development Initiative for North East Region (PM-DevINE)

Why in News?

Recently, the Union Cabinet approved a new Scheme, **Prime Minister's Development Initiative for North East Region (PM-DevINE)**.

- PM-DevINE was announced in the **Union Budget 2022-23** to address development gaps in the North Eastern Region (NER).

What is PM-DevINE Scheme?

➤ About:

- It is a **Central Sector Scheme with 100% Central funding**.

- The new scheme, to be implemented during the remaining four years of the **15th Finance Commission** from 2022-23 to 2025-26 have an **outlay of Rs.6,600 crore**.

- The PM-DevINE is in addition to the quantum of resources available for the development of the NE region. It will not be a substitute for existing central and state schemes.

➤ Implementation:

- The scheme will be implemented by the **Ministry of Development of North Eastern Region through North Eastern Council or Central Ministries/agencies**.

➤ Objectives:

- Fund infrastructure convergently, in the spirit of **PM Gati Shakti**
- Support social development projects based on felt needs of the NER
- Enable livelihood activities for youth and women
- Fill the development gaps in various sectors

What is the Significance of North East for India?

- Strategic Significance:** North-East India is the gateway to **South-East Asia** and beyond. It is India's land-bridge to Myanmar.

- India's Act East Policy** places the northeastern states on the territorial frontier of India's eastward engagement.

- Cultural Significance:** North East India is one of the most culturally diverse areas of the world. It is home to over 200 tribes. Popular festivals include the **Hornbill Festival of Nagaland**, Pang Lhabsol of Sikkim, etc.

- North-east India is a **Dowry-Free Zone**.
- The rich tapestry of cultures of Northeast is reflected in its highly developed Folk dance forms like **Bihu** (Assam).

- Manipur has a tradition of worshipping nature in sacred groves, called **UmangLai**.

- Economic Significance:** Economically, the Region is rich in natural resources of "TOT" (Tea, Oil, and Timber).
 - It is a veritable powerhouse with a potential of 50000 MW of **hydroelectric power** and an abundant **reserve of fossil fuels**.

- Ecological Significance:** North East is a part of Indo-Burma **biodiversity hotspot**. It represents one of the highest avian and plant biodiversity of the Indian subcontinent.

Note:

- This area has the prestige of having all the bear species present in India.

What are Current Challenges Pertaining to North-East India?

- **Isolation From the Rest of India:** The region's accessibility has always remained weak due to geographical reasons and underdeveloped transport links with the rest of India.
- **Lack of Efficient Infrastructure:** Infrastructure i.e., physical (like roadways, waterways, energy and so on) as well as social infrastructure (for instance educational institutions, health facilities) plays an important role in human development and economic growth of any region
 - One of the reasons for the **economic backwardness of the North-Eastern states is the poor state of basic infrastructural facilities.**
- **Slow Pace of Industrial Growth:** North-East India has remained historically underdeveloped in terms of **industrial growth**.
- **Territorial Conflicts:** There are existing inter-state and international territorial conflicts within the Northeast that are often based on historical border disputes and differing ethnic, tribal or cultural affinities. **Example: Assam-Mizoram Border Dispute.**
- **Insurgency and Political Issues:** Insurgency or terrorism is a political weapon and is often the result of accumulated anger due to political, economic and social causes.
 - The North-Eastern states have witnessed a rise of insurgent activities and regional movements with a feeling of exploitation and alienation from other Indian states.

What are the Major Infrastructure Projects in the Northeast?

- **Rail, Road and Air Connectivity:**
 - 4,000 km of roads, 20 railway projects for 2,011 km and 15 air connectivity projects are being developed.
- **Waterways Connectivity:**
 - National waterways on the Ganges, Brahmaputra and Barak rivers (National Waterways (NW)-1 on the Ganges, NW-2 on Brahmaputra and NW-16 on Barak) are under development to provide better connectivity.

- **Eastern Waterways Connectivity Transport Grid:**
 - It will connect the northeast with the rest of India by providing 5,000 km of navigable waterways.
- **North Eastern Region Power System Improvement Project (NERPSIP):**
 - **(NERPSIP)** is a major step towards economic development of the North Eastern Region through strengthening of Intra - State Transmission and Distribution systems.
 - Government is also emphasizing on projects related to power transmission and distribution, mobile networks, 4G, and broadband connectivity.

India's First 24x7 Solar-Powered Village

Why in News?

Recently, the Prime Minister declared **Modhera**, a village in the Mehsana district of Gujarat as India's first **solar-powered village**.

What are the Key Highlights of India's First Solar Powered Village?

- **About Modhera Village:** Modhera is famous for its **Sun temple**, a protected ancient site, which is situated on the **river Pushpavati**. It was built by **King Bhima-I of the Chalukya dynasty in 1026-27**.
 - The temple will acquire a 3-D projection facility which will inform tourists about the history of Modhera.
- **Solar Power Generation:** The solar power village would be self-sufficient in solar energy generation, as it will utilise 1000 solar panels that have been installed on the village houses, **generating electricity round the clock for the villagers**.
 - It is developed through **Ground Mounted Solar power plant** and more than **1300 Rooftop solar systems** on residential and Government buildings, all integrated with **Battery Energy storage systems (BESS)**.
 - A BESS is a type of energy storage system that uses batteries to store and distribute energy in the form of electricity.
- **Benefits:**

Note:

- The project will demonstrate how India's renewable energy prowess can **empower people at the grassroots.**
 - The people in the village wouldn't pay for electricity, rather they could **start selling it and earn from energy produced by the solar panel** by selling it to the government grid.
 - It will generate employment at the village level, and ultimately improve the standard of living.
- It will enhance the **sustainable implementation of various welfare projects** in the area.
 - Residents of the area will be able to **save 60-100% of their electricity bills.**
- It will **reduce the drudgery among rural women and girls** engaged in the collection of fuel wood from long distances and cooking in smoky kitchens.
 - It will also result in **minimization of the risks of contracting lung and eye ailments.**

What is the Status of Solar Energy in India?

- **About:** The installed **solar energy** capacity has increased by 19.3 times in the last 8 years and stands at 56.6 GW.
- Further, India has set an **ambitious target to achieve a capacity of 175 GW worth of renewable energy by the end of 2022**, which expands to 500 GW by 2030. This is the world's largest expansion plan for renewable energy.
- India was the **second-largest market in Asia for new solar PV capacity** and third globally. It ranked fourth for total installations (60.4 GW), overtaking Germany (59.2 GW) for the first time.
- As of June 2022, **Rajasthan and Gujarat were the top states** for large-scale solar, accounting for 53% and 14% of installations, respectively, **followed by Maharashtra with 9%.**
- **Related Initiatives:**
 - **Solar Park Scheme:** The **Solar Park Scheme** plans to build a number of solar parks, each with a capacity of nearly 500 MW, across several states.
 - **Rooftop Solar Scheme:** The **Rooftop Solar Scheme** aims to harness solar power by installing **solar panels** on the roof of houses.
 - **Atal Jyoti Yojana (AJAY):** The AJAY scheme was launched in September 2016 for the installation of **solar street lighting (SSL)** systems in states with less than **50%** of households covered with **grid power** (as per **Census 2011**).

- **National Solar Mission:** It is a major initiative of the Government of India and State Governments to promote ecologically sustainable growth while addressing India's energy security challenge.
- **SRISTI Scheme:** Sustainable rooftop implementation of Solar transfiguration of India (SRISTI) scheme to promote rooftop solar power projects in India.

What are the Challenges

Related to Solar Energy in India?

- **Heavy Dependence on Imports:** India doesn't have enough module and PV cell manufacturing capacity.
 - The current solar module manufacturing capacity is **limited to 15 GW per year, whereas the domestic production is around 3.5 GW only.**
 - Further, out of the 15 GW of module manufacturing capacity, **only 3-4 GW of modules are technologically competitive** and worthy of deployment in grid-based projects.
- **Raw Material Supply:** The silicon wafer, the most expensive raw material, is not manufactured in India.
 - It currently imports **100% silicon wafers** and around 80% cells.
 - Further, other key raw materials, such as **silver and aluminium metal pastes for making electrical contacts, are also almost 100% imported.**
- **Inefficiencies in Solar PV Cells:** The utility-scale solar PV sector continues to face challenges like land costs, high T&D losses and other inefficiencies, and grid integration challenges.
- **Issues Related to Biodiversity:** There have also been conflicts with local communities and biodiversity protection norms.
- **Pricing Issue:** while India has achieved record low tariffs for solar power generation in the utility-scale segment, this has not translated into cheaper power for end-consumers.

Transforming Agrifood Systems with Forests

Why in News?

Recently, the **Food and Agriculture Organization (FAO)** of the **United Nations** released a report on **deforestation, livestock grazing and farmer field schools.**

Note:

- FAO released the report at FAO-Global Landscapes Forum digital forum Transforming agrifood systems with forests.
- A **Farmer Field School** brings together a group of farmers, livestock herders or fisherfolk, to learn how to shift towards more sustainable production practices, by better understanding complex agro-ecosystems and by enhancing ecosystem services.

What are the Highlights of the Report?

- Food demand to support the **global population will be 50% more in 2050 compared with 2012**.
- Production will need **165 to 600 million more hectares of land for crop and livestock production**, much of which is currently covered by forests and other critical ecosystems.
- From 2000-2018, almost 90% of deforestation globally was attributable to agricultural expansion.
 - This **negatively impacts associated ecosystem services** such as carbon sequestration and biodiversity.
- The **world has lost 420 million hectares of forests** in the last two decades, as per **FAO's Global Forest Resources Assessment 2022**.
- Forests are vital to slow the rate of deforestation, which stood at 11 million ha per year from 2000-2010.

What are the Recommendations?

- **'Forest Positive' Food Production:**
 - The need of the hour is to **build sustainable global agrifood systems** based on the synergies between agriculture and forests that provide a win-win outcome for both sectors.
 - Governments **need to create conditions for farmers to change their practices to maximise production** while minimising the impact on forests and biodiversity.
 - Governments **need to pay special attention to smallholder farmers**, who produce roughly 35% of the world's food, but often live in **poverty** and cannot afford the costs or interruptions to income incurred through changing the way they work.
- **Restoring Degraded Land:**
 - **Properly integrated grazing can play a vital role in restoring degraded land with trees**, halting desertification and improving wildfire prevention in drylands.

- Drylands are home to about **25% of the global population**, contain 50% of the world's livestock, 27% of the world's forests and are where about 60% of the world's food production takes place.
- **Silvopastrolism** (combining animal grazing and trees) can also **help enhance local communities' food security and income** by preventing land degradation.
- Woody plants in drylands **provide animal feed, timber and fruit as well as help to increase biodiversity** and regulate soil and water cycles.
- At the same time, **grazing livestock helps control vegetation**, reduce the risk of wildfires, accelerate nutrient cycles and improve soil fertility.

> Part of the Solution:

- As part of an integrated landscape approach utilizing agroforestry, landscape planners and decision-makers should consider livestock as part of the solution and carefully restore open tree cover (when tree cover is between 30 and 70%).

What is FAO?

- **About:**
 - FAO is a specialized agency of the **United Nations** that leads international efforts to defeat hunger.
 - **World Food Day** is celebrated every year on 16th October to mark the anniversary of the founding of the FAO in 1945.
 - It is one of the UN food aid organisations based in Rome (Italy). Its sister bodies are the **World Food Programme** and the International Fund for Agricultural Development (IFAD).
- **Initiatives Taken:**
 - **Globally Important Agricultural Heritage Systems (GIAHS)**.
 - Monitors the **Desert Locust** situation throughout the world.
 - The **Codex Alimentarius Commission or CAC** is the body responsible for all matters regarding the implementation of the Joint FAO/WHO Food Standards Programme.
 - **The International Treaty on Plant Genetic Resources for Food and Agriculture.**
- **Flagship Publications:**
 - The State of World Fisheries and Aquaculture (SOFIA)

Note:

- The State of the World's Forests (SOFO)
- **The State of Food Security and Nutrition in the World (SOFI)**
- The State of Food and Agriculture (SOFA)
- The State of Agricultural Commodity Markets (SOCO)
- **World Food Price Index**

UNESCO Lists 50 Iconic Textile Crafts

Why in News?

Recently, **UNESCO** released a list of 50 exclusive and iconic heritage textile crafts of the country.

- One of the major challenges to the safeguarding of **Intangible Cultural Heritage** in South Asia is **lack of proper inventory and documentation**.

What are Some of the Important Textiles Crafts Listed?

- Toda embroidery and Sungudi from Tamil Nadu
- Himroo weaves from Hyderabad
- Bandha tie and dye weaving from Sambalpur in Odisha
- Kunbi weaves from Goa
- Mashru weaves and Patola from Gujarat
- Himroo from Maharashtra
- Garad-Korial from West Bengal
- Ilkal and Lambadi or Banjara embroidery from Karnataka
- Sikalnayakanpet Kalamkari from Tamil Nadu
- Khes from Haryana
- Chamba rumals from Himachal Pradesh

- Thigma or wool tie and dye from Ladakh
- Awadh Jamdani from Varanasi

What is UNESCO?

- **About:**
 - It was founded in 1945 to develop the "intellectual and moral solidarity of mankind" as a means of building lasting peace. It is located in Paris, France.
- **Major Initiatives of UNESCO:**
 - **Man and Biosphere Programme**
 - **World Heritage Programme**
 - **Global Geopark Network**
 - **Network of Creative Cities**
 - **Atlas of World Languages in Danger**

What is Intangible Cultural Heritage?

- Intangible cultural heritage is the practices, expressions, knowledge and skills that communities, groups and sometimes individuals recognise as part of their cultural heritage.
- Also called living cultural heritage, it is usually expressed in one of the following forms:
 - Oral Traditions
 - Performing Arts
 - Social Practices
 - Rituals and Festive events
 - Knowledge and Practices concerning nature and the universe
 - Traditional Craftsmanship
- India has 14 intangible cultural heritage elements on the prestigious UNESCO Representative List of Intangible Cultural Heritage of Humanity.

Existing Traditions of India Recognised by UNESCO

1.	Tradition of Vedic chanting, 2008	8.	Buddhist chanting of Ladakh: recitation of sacred Buddhist texts in the trans-Himalayan Ladakh region, Jammu and Kashmir, India, 2012
2.	Ramlila, the traditional performance of the Ramayana, 2008	9.	Sankirtana, ritual singing, drumming and dancing of Manipur, 2013
3.	Kutiyattam, Sanskrit theatre, 2008	10.	Traditional brass and copper craft of utensil making among the Thatheras of Jandiala Guru, Punjab, India ,2014
4.	Ramman, religious festival and ritual theatre of the Garhwal Himalayas, India, 2009	11.	Yoga, 2016
5.	Mudiyettu, ritual theatre and dance drama of Kerala, 2010	12.	Nowruz, 2016
6.	Kalbelia folk songs and dances of Rajasthan, 2010	13.	Kumbh Mela, 2017
7.	Chhau dance, 2010	14.	Durga Puja, 2021

Note:

What is the Status of the Textile Sector of India?

- **About:**
 - Textiles & garments industry is labour intensive sector that employs 45 millions people in India is **second only to the agriculture sector** in terms of employment.
 - India's textiles sector is one of the oldest industries in the Indian economy, and is a storehouse and carrier of traditional skills, heritage and culture.
 - It can be divided into two segments:
 - The unorganised sector is small scale and uses traditional tools and methods. It consists of **handloom**, handicrafts and **sericulture** (Production of silk).
 - The organised sector uses modern machinery and techniques and consists of the spinning, apparel and garments segment.
- **Significance of the Textiles Sector:**
 - It contributes 2.3% to Indian **Gross Domestic Product**, 7% of Industrial Output, 12% to the export earnings of India and employs more than 21% of total employment.
 - India is the **6th largest producer of Technical Textiles** with 6% Global Share, largest producer of cotton & jute in the world.
 - Technical textiles are functional fabrics that have applications across various industries including automobiles, civil engineering and construction, agriculture, healthcare, industrial safety, personal protection etc.
 - India is also the **second largest producer of silk in the world** and 95% of the world's hand-woven fabric comes from India.

What are the Initiatives related to the Textile Sector?

- **Amended Technology Upgradation Fund Scheme (ATUFS):** In 2015, the government approved the scheme for **technology upgradation of the textiles industry**.
- **Scheme for Integrated Textile Parks (SITP):** To assist small and medium entrepreneurs in the textile industry to clusterize investments in textile parks by providing financial support for world class infrastructure in the parks.

- **Power-Tex India:** It comprises new research and development in power loom textiles, new markets, branding, subsidies and welfare schemes for the workers.
- **Silk Samagra Scheme:** It **focuses on improving the quality and productivity of domestic silk** thereby reducing the country's dependence on imported silk.
- **Jute ICARE:** This pilot project launched in 2015 is **aimed at addressing the difficulties faced by the jute cultivators by providing them certified seeds** at subsidized rates, and by popularizing several newly developed retting technologies under water limiting conditions.
- **National Technical Textile Mission:** It aims to **position the country as a global leader in technical textiles** and increase the use of technical textiles in the domestic market. It aims to take the domestic market size to USD 40 billion to USD 50 billion by 2024.

Global Innovation Index 2022

Why in News?

Recently, India was ranked 40th position out of 132 in the **Global Innovation Index (GII) 2022 rankings** released by **World Intellectual Property Organisation (WIPO)**.

- India was ranked 46th position in 2021, and 81st rank in 2015.

What are the Highlights of the Report?

- **Ranking of the Countries:**
 - **Most Innovative Economy:**
 - Switzerland is the most innovative economy in the world in 2022 - for the 12th year in a row - followed by the United States, Sweden, the United Kingdom and the Netherlands.
 - China is nearing the top 10 while **Türkiye and India enter the top 40 for the first time**.
 - **Performance of India:**
 - **India is the innovation leader** in the lower middle-income group.
 - It continues to lead the **world in ICT services exports** and holds top rankings in other indicators, including venture capital receipt value, finance for **startups** and scaleups, graduates in science and engineering, labor productivity growth and domestic industry diversification.

Note:

- **Increase in R & D Expenditure:**
 - The top global corporate R&D spenders increased their **R&D expenditure by almost 10% to over USD 900 billion in 2021**, higher than in 2019 before the pandemic.
- **Venture Capital (VC) Growth:**
 - It exploded by 46% in 2021, recording levels comparable to the internet boom years of the late 1990s. Latin America and the Caribbean and Africa regions are witnessing the strongest VC growth.

What is the Global Innovation Index?

- **About:**
 - The Global Innovation Index, which is **published annually**, has been a **leading reference for measuring an economy's innovation performance**.
 - A large number of countries use the GII to **assess and improve their innovation ecosystems** and use the GII as a reference in economic plans and/or policies.
 - The GII has also been **recognized by the UN Economic and Social Council** in its 2019 resolution on Science, Technology and Innovation for Development as an authoritative benchmark for measuring innovation in relation to the **Sustainable Development Goals (SDGs)**.
- **Indicators of the index:**
 - Parameters for computing the index include 'institutions', 'human capital and research', 'infrastructure', 'market sophistication', 'business sophistication', 'knowledge and technology outputs' and 'create outputs'.
- **Theme for 2022:** "What is the future of innovation-driven growth?".
- **Effects of Two Novel Innovation Waves:** The GII 2022 also **outlines the positive effects of two novel innovation waves**, although it emphasizes that such effects would take some time to be realized:
 - **A digital age innovation wave** built on **supercomputing, artificial intelligence**, and automation. **Effect:** making ample productivity impacts across all sectors and fields of scientific research.
 - **A Deep Science innovation wave** built on breakthroughs in biotechnologies, nanotechnologies,

new materials, and other sciences. **Effect:** revolutionizing innovations in health, food, environment, and mobility (four fields of key importance to society).

What is WIPO?

- WIPO is the **global forum for intellectual property (IP) services**, policy, information and cooperation.
- It is a **self-funding agency of the United Nations**, with 193 member states.
- Its aim is to **lead the development of a balanced and effective international IP system** that enables innovation and creativity for the benefit of all.
- Its mandate, governing bodies and procedures are set out in the WIPO Convention, which established WIPO in 1967.

What are the Related Initiatives by India?

- **Digital India:**
 - India embarked on the '**Digital India**' journey in **2015** and have set up a goal of a trillion-dollar digital economy in the next few years.
 - Digital technologies are used in several areas, including mapping capital assets using GIS technology and revolutionizing payments through **Unified Payments Interface (UPI)**.
 - In fact, **40% of global real-time digital transactions** happened in India in 2021.
- **National Education Policy 2020:**
 - To further strengthen innovation, the **National Education Policy** was introduced which promoted the spirit of enquiry by setting up incubation & technology development centers.
- **Atal Tinkering Labs:**
 - Over 9000 **Atal Tinkering Labs** encourage youth to develop solutions to society's problems.
- **Structural Reforms in IPR:**
 - India has taken up structural reforms to strengthen its **Intellectual property rights (IPR)** regime including modernization of IP offices, reducing legal compliances and facilitating IP filing for start-ups, women entrepreneurs, the small industries and others.
 - Domestic filing of Patents registered a 46% growth in the last 5 years.

Note:

Telecom Technology Development Fund (TTDF) Scheme

Why in News?

Recently, the Universal Service Obligation Fund (USOF) launched the Telecom Technology Development Fund (TTDF) Scheme.

- Universal Service Obligation Fund (USOF) is a body under the **Department of Telecommunications (DoT)** to fund rural and remote digital connectivity.
- The Centre in the **draft telecom bill, 2022** has said that the USOF, created under the **Indian Telegraph Act of 1885**, shall be referred to as the "Telecommunication Development Fund".

What is the Telecom Technology Development Fund (TTDF) Scheme?

- TTDF aims to fund R&D in rural-specific communication technology applications and form synergies among academia, start-ups, research institutes, and the industry to build and develop the telecom ecosystem.
- The scheme aims to **promote technology ownership and indigenous manufacturing**, create a culture of technology co-innovation, reduce imports, boost export opportunities and creation of Intellectual Property.
- Under the scheme, **USOF is also targeting to develop standards to meet countrywide requirements** and create the ecosystem for research, design, prototyping, use cases, pilots, and proof of concept testing, among others.
- The scheme **entails grants to Indian entities to encourage and induct indigenous technologies** tailor-made to meet domestic needs.

What is the Present Status of the Telecom Sector of India?

- The Telecom industry in India is the **second largest in the world** with a subscriber base of 1.17 billion as of 2022. India has an overall teledensity of 85.11%.
- The **industry's exponential growth over the last few years is primarily driven by affordable tariffs**, wider availability, the roll-out of Mobile Number Portability (MNP), expanding 3G and 4G coverage, and evolving consumption patterns of subscribers.

- The **Telecom sector is the 3rd largest sector in terms of Foreign Direct Investment (FDI) inflows**, contributing 6.44% of total FDI inflow, and contributes directly to 2.2 million employment and indirectly to 1.8 million jobs.
- Between 2014 and 2021, the FDI inflows in the Telecom sector rose by 150% to USD 20.72 billion from USD 8.32 billion during 2002-2014.
- 100% Foreign Direct Investment (FDI) has now been allowed in the Telecom sector under the automatic route.
- India is on its way to **becoming the second-largest smartphone market globally by 2025** with around 1 billion installed devices and is expected to have 920 million unique mobile subscribers by 2025 which will include 88 million 5G connections.

Sustainable Finance

Why in News?

A Committee on Sustainable Finance, constituted by **International Financial Services Centres Authority (IFSCA)** submitted its report on Sustainable Finance suggesting development of the **carbon market** among others.

What is Sustainable Finance?

- Sustainable finance is defined as **investment decisions that take into account the environmental, social, and governance (ESG) factors** of an economic activity or project.
 - **Environmental factors** include mitigation of the climate crisis or use of sustainable resources.
 - **Social factors** include human and animal rights, as well as consumer protection and diverse hiring practices.
 - **Governance factors** refer to the management, employee relations, and compensation practices of both public and private organizations.

What are the Recommendations of the Committee?

- Developing a voluntary carbon market, framework for transition bonds, enabling de-risking mechanisms, promoting **regulatory sandbox** for **green fintech** and facilitating the creation of a global climate alliance among others.
- Setting up of a **dedicated MSME (Micro, Small and Medium Enterprises) platform** for sustainable lending.

Note:

- Facilitating the use of innovative instruments such as **catastrophe bonds, municipal bonds, green securitisation, blended finance among others.**
- **Enabling aggregation facilities, impact funds, green equity etc. in IFSC.**
- **IFSCA has to play a vital role in capacity building** which lays the foundation for greening the financial system.

What is IFSCA?

- **Establishment:**
 - The IFSCA was established **in 2020 under the International Financial Services Centres Authority Act, 2019.**
 - It is headquartered at **GIFT (Gujarat International Finance Tec-City) City, Gandhinagar in Gujarat.**
- **Role:**
 - The IFSCA is a unified **authority for the development and regulation of financial products, financial services and financial institutions** in the International Financial Services Centre (IFSC) in India.
 - At present, the GIFT IFSC is the **maiden international financial services centre in India.**
 - Prior to the establishment of IFSCA, the domestic financial regulators, namely, **RBI, SEBI, Insurance Regulatory and Development Authority of India (IRDAI), and the Pension Fund Regulatory and Development Authority (PFRDA)** regulated the business in IFSC.
- **Members:**
 - The International Financial Services Centres Authority **consists of nine members**, appointed by the central government.
 - They include the **chairperson of the authority**, a member each from the **RBI, SEBI, the IRDAI, and the PFRDA**; and two members from the Ministry of Finance. In addition, two other members are appointed on the recommendation of a Selection Committee.
- **Term:**
 - All members of the IFSCA have a **term of three years**, subject to reappointment.

What are the Carbon Markets?

- **Carbon markets** allow for buying and selling of carbon emissions with the objective of reducing global emissions.
- Carbon markets existed under the Kyoto Protocol, which is being replaced by the **Paris Agreement in 2020.**

- **Carbon Markets** can potentially **deliver emissions reductions** over and above what countries are doing on their own.
 - For example, technology upgradation and emission reduction of a **brick kiln in India can be achieved in two ways:**
 - A developed country which is unable to meet its reduction target can provide money or technology to the brick kiln in India, and thus claim the reduction of emission as its own.
 - Alternatively, the kiln can make the investment, and then offer on sale the emission reduction, called carbon credits. Another party, struggling to meet its own targets, can buy these credits and show these as their own.

What are the Related Indian Government Initiatives?

- **Perform Achieve and Trade (PAT) Scheme:** The government has undertaken the **PAT scheme**, targeting carbon emission reduction in 13 energy intensive sectors.
- **Encouraging Foreign Capital:** The Government has permitted **Foreign Direct Investment (FDI)** up to 100 percent under the automatic route in the renewable energy sector.
- **Encouraging Renewable energy:**
 - The Government has waived inter-state Transmission System (ISTS) charges for inter-State sale of solar and wind power for projects.
 - Making provisions for **Renewable Purchase Obligation (RPO)** and setting up Renewable Energy parks
- **India's Nationally Determined Contribution:** Under the Paris Agreement which was adopted by signatory countries in 2015, India had submitted **Nationally Determined Contribution (NDC)** with quantified targets
 - To reduce the emissions intensity of its **Gross Domestic Product (GDP)** by 33-35% till 2030 from the levels at 2005,
 - To achieve about 40% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030,
 - To create an additional carbon sink of 2.5-3 billion tonnes of carbon dioxide equivalent through additional forest and tree cover by 2030.

Note:

Tokenisation of Cards in India

Why in News?

Recently, the **Reserve Bank of India (RBI)** has made tokenisation mandatory for all credit and debit cards used in online, point-of-sale, and in-app transactions.

- The customer will not be charged for availing the tokenisation service.

What is Tokenisation?

- It refers to the **replacement of actual card details with a unique alternate code called the ‘token’**, which shall be **unique for a combination of card, token requester** (i.e., the entity which accepts requests from the customer for tokenisation of a card and passes it on to the card network to issue a corresponding token) and the device.

What was the Need for Tokenisation?

- **Vulnerability of Sensitive Data:** E-commerce giants like Amazon, Myntra, Flipkart, Bigbasket, etc., save sensitive card details with them like card number, expiration date, and CVV get stored in these companies' databases.
 - But if the databases get hacked, it poses a real problem as all the card data will become easily accessible.
- **Rise of Digital Fraud:** The **COVID-19** pandemic has pushed drastic changes into the digital economy. With more and more customers and merchants adapting to **digital payments**, it is now more important than ever to tighten security.
 - With an average of 6 billion transactions happening every month, fraud could also grow proportionally if not taken care of.
 - This fraud can be a huge threat to the entire country's financial system. From 2019 to 2020, **card fraud has increased by 14% Compounded Annual Growth Rate (CAGR)**, while in the last three years, it has increased by **34%**.
- **Outdated Present System:** The current **Card-on-File system (CoF)** can be easily breached, and the data can be stolen. So, to take care of the security concerns, RBI has come up with the Tokenization system, which guarantees that the customers' details cannot be breached and cannot be misused by anybody.

- A CoF transaction is a transaction where a cardholder has authorised a merchant to store the cardholder's Mastercard or Visa payment details.

Who can Offer Tokenisation Services?

- **Authorised Card Networks:** Tokenisation can be performed only by the **authorised card network** and recovery of the original **Primary Account Number (PAN)** should be feasible for the authorised card network only.
- Further, adequate safeguards have to be put in place to **ensure that PAN and other sensitive data cannot be found from the token and vice versa**, by anyone except the card network. RBI has emphasised that the integrity of the token generation process has to be ensured at all times.

What are the Benefits of Tokenisation?

- A tokenised card transaction is considered safer as the **actual card details are not shared with the merchant during transaction processing**. Real card data, tokens and other relevant information are stored securely by the authorised card networks.
- The token requestor cannot store Primary Account Number (PAN), or any other card details. Card networks are also mandated to get the token requester certified for safety and security that conforms to international best practices/globally accepted standards.
- Tokenization paves the way for **advanced innovations in the payment ecosystem**. It has become the cornerstone for payments, whether in-store, online or through mobile wallets.
- Strengthens trust between customers and businesses.
- Reduces the level of red tape for businesses.
- Creates an ecosystem of smoother and safer payment experiences for all parties involved.

What is the Status of Card Payments in India?

- As per RBI's annual report for 2021-22, payment transactions carried out through credit cards increased by 27% to 223.99 crores in volume terms and 54.3% to 9.72 lakh in value terms during 2021-22.
- Till July (2022), the number of credit cards issued stood at around 8 crores, and debit cards in the system were 92.81 crores.

Note:

Proposed Digital Rupee

Why in News?

The Reserve Bank of India (RBI) will soon commence limited pilot launches of e-rupee (e`), or Central Bank Digital Currency (CBDC) or digital rupee, for specific use cases.

- It has hinted at two broad categories for the use of e-rupee — retail and wholesale — for various transactions.

What is e-rupee?

- **Definition:** RBI defines the CBDC as the **digital form of currency notes issued by a central bank**. It is a sovereign or entirely independent currency issued by the central bank (in this case, RBI), in accordance with the country's monetary policy.
- **Legal Tender:** Once officially issued, **CBDC will be considered as a medium of payment and legal tender by all three parties** - citizens, government bodies, and enterprises. Being government-recognised, it can be freely converted to any commercial bank's money or notes.
 - RBI is **not in favour of e-rupee with interest**. Because people might withdraw money from banks and convert it to digital rupee - causing banks to fail.
- **Difference with Cryptocurrencies:** The underlying technology of **cryptocurrency (distributed ledger)** can underpin parts of the digital rupee system, but the RBI has not decided on this, yet. However, **cryptocurrencies like bitcoin or ethereum are 'private' in nature**. **Digital rupee on the other hand, will be issued and controlled by the RBI**.
- **Global Scenario:** As of July 2022, 105 countries were exploring CBDC. **Ten countries have launched CBDC**, the first of which was the Bahamian Sand Dollar in 2020 and the latest was Jamaica's JAM-DEX.

What is RBI's Plan for CBDC?

- **Types of CBDC:** On the basis of **usage and the functions** performed by the digital rupee and considering the different levels of **accessibility**, **CBDC can be demarcated into two broad categories — general purpose (retail) (CBDC-R) and wholesale (CBDC-W)**.
 - **Retail CBDC** is an **electronic version of cash primarily meant for retail transactions**. It will be used by

all — private sector, non-financial consumers and businesses. However, the **RBI has not explained how e-rupee can be used in merchant transactions in the retail trade**.

- **Wholesale CBDC** is designed for **restricted access to select financial institutions**. It has the potential to transform the settlement systems for financial transactions undertaken by banks into government securities (**G-Sec**) segment, inter-bank market and capital market more efficiently and securely in terms of operational costs, use of collateral and liquidity management.
- **Structure:**
 - **A token based CBDC would be a bearer instrument like banknotes**, the person receiving a token will verify that his ownership of the token is genuine. A token-based CBDC is viewed as a preferred mode for CBDC-R as it would be closer to physical cash.
 - **An account-based system** would require **maintenance of records of balances and transactions of all holders of the CBDC and indicate the ownership of the monetary balances**. In this case, an intermediary will verify the identity of an account holder. This system can be considered for CBDC-W.
- **Available in Online and Offline mode:** The offline functionality as an option will allow **CBDC to be transacted without the internet** and thus enable access in regions with poor or no internet connectivity.
 - However, the RBI feels in the offline mode, **the risk of 'double-spending' will exist** because it will be technically possible to use a CBDC unit more than once without updating the common ledger of CBDC.
- **Model for Issuance:**
 - **In the direct model**, the central bank will be responsible for managing all aspects of the digital rupee system such as issuance, account-keeping and transaction verification.
 - **An indirect model** would be one where the central bank and other intermediaries (banks and any other service providers), each play their respective role. The central bank will issue CBDC to consumers indirectly through intermediaries and any claim by consumers will be managed by the intermediary.

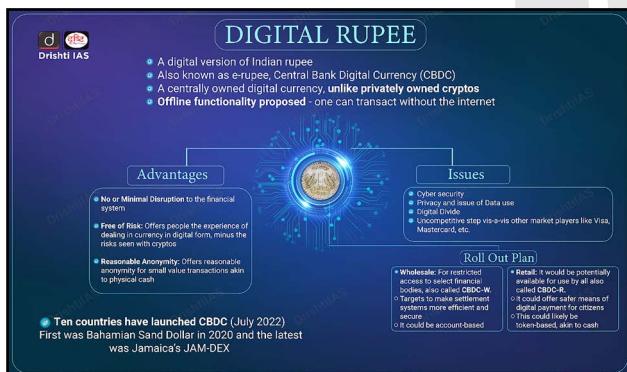
Note:

What are the advantages of e-rupee?

- **Reduction in operational costs** involved in physical cash management, fostering **financial inclusion**, bringing resilience, efficiency and **innovation in the payments system**.
- Provide the public with uses that any private virtual currencies can provide, without the associated risks.

What are the issues related to CBDC in India?

- **Cyber Security:** CBDC ecosystems **may be at a similar risk of cyber-attacks that the current payment systems are exposed to.**
- **Privacy issue:** The CBDC is expected to generate huge sets of data in real time. Privacy of the Data, concerns related to its anonymity and its effective use will be a challenge.
- **Digital divide and financial illiteracy:** The **NFHS-5** also provides data segregation based on the rural-urban divide. **Only 48.7% of rural males and 24.6% of the rural females have ever used the internet.** So, CBDC may wide gender-based hurdle in financial inclusion along with digital divide.



Decline in Forex Reserves

Why in News?

According to the **Reserve Bank of India (RBI)**, India's **forex reserves** have fallen by USD 110 billion in the last 13 months.

What are Forex Reserves?

- **About:** **Forex reserves** are assets held on reserve by a central bank in foreign currencies, which can include **bonds, treasury bills** and other government securities.
- Most foreign exchange reserves are held in US dollars.

Note:

Components:

- Foreign Currency Assets
- Gold reserves
- **Special Drawing Rights**
- Reserve position with the **International Monetary Fund (IMF)**.

Significance of Forex Reserves:

- Supporting and maintaining confidence in the policies for monetary and **exchange rate** management.
- Provides the capacity to intervene in support of the national or union currency.
- Limits external vulnerability by maintaining foreign currency liquidity to absorb shocks during times of crisis or when access to borrowing is curtailed.

What are Special Drawings Rights?

- The SDR is an **international reserve asset**, created by the IMF in 1969 to supplement its member countries' official reserves.
- The SDR is neither a currency nor a claim on the IMF. Rather, it is a **potential claim on the freely usable currencies of IMF members**. SDRs can be exchanged for these currencies.
- The value of the **SDR is calculated** from a weighted basket of major currencies, **including the US dollar, the euro, the Japanese yen, the Chinese yuan, and the British pound**.
- The interest rate on SDRs or (SDRi) is the interest **paid to members on their SDR holdings**.

What are the Reasons for the Decline in India's Forex Reserves?

Current Scenario:

- India's forex reserves have fallen by USD 110 billion since September 2021 where it stood at a record high of USD 642.45 billion.
 - It needs to be noted that **Indian rupee is a freely floating currency**, and its **exchange rate is market determined**. The RBI does not have any fixed exchange rate.
- Despite this drastic decline, **India has been faring much better than several reserve currencies, EMES (emerging market economies) and its Asian peers.**

Causes of Declining Forex Reserves:

- **Defending Rupee:** The central bank has been selling dollars from the forex reserves to support the rupee amid pressures caused majorly by global developments.
 - The intervention is needed to curb the free fall of the rupee and reduce volatility in the market.
- **Aggressive Policy of the US Fed:**
 - **Capital Outflows:** Capital outflows by **foreign portfolio investors (FPIs)** as the US Federal Reserve started the **monetary policy tightening and interest rate hikes**.
 - FPIs have begun to withdraw from the Indian markets. These FPIs were **sellers in financial and IT services** and **buyers in telecom and capital goods**.
 - **Valuation Loss:** The valuation loss, reflecting the **appreciation of the US dollar** against major currencies and the **decline in gold prices** also played a part in the decrease in foreign exchange reserves.
 - About 67% of the decline in reserves during the current financial year was due to valuation changes arising from an appreciating US dollar and higher US bond yields.

What are the Factors Affecting Exchange Rates?

- **Inflation Rates:** Changes in **market inflation** cause changes in currency exchange rates. For e.g., a country with a **lower inflation rate than another will see an appreciation in the value of its currency**.
- **Balance of Payments:** It consists of a total number of transactions including exports, imports, debt, etc.
 - A deficit in the current account due to spending more of its Forex on importing products than it is earning through the sale of exports causes depreciation, and it further **fluctuates the exchange rate of its domestic currency**.
- **Government Debt:** Government debt is a debt owned by the central government. A country with large government debt is less likely to acquire foreign capital, leading to inflation.
 - In this case, foreign investors will sell their bonds in the open market if the market predicts government debt within a certain country. As a result, a decrease in the value of its exchange rate will follow.

Note:

World Economic Outlook: IMF

Why in News?

Recently, the **International Monetary Fund (IMF)** released the latest edition of World Economic Outlook 2022.

What are the Highlights of the World Economic Outlook?

- **Indian Scenario:**
 - It cut its forecast for India's **Gross Domestic Product (GDP)** growth in 2022 to **6.8 %**, from **7.4 %** for India in the fiscal year that started in April 2022.
 - For 2023, India has been projected to grow at **6.1%**.
- **Global Scenario:**
 - Global growth is forecast to slow from **6% in 2021 to 3.2% in 2022 and 2.7% in 2023**. This is the weakest growth profile since 2001, except for the global financial crisis and the acute phase of the Covid-19 pandemic.
 - The global growth is expected to slow further in 2023. The worst is yet to come and, for many people 2023 will feel like a recession.
 - A slowdown in the Euro area is expected to deepen in 2023, and growth in China is projected to hit its lowest rate in decades apart from during the initial coronavirus outbreak.
- **Inflation:**

GDP projections by IMF

World Economic Outlook released today shows Indian economy to grow at 6.8%, lower than its previous projection of 7.4%

Countries	2022	2023
India	6.8%	6.1%
Spain	4.3%	1.2%
UK	3.6%	0.3%
Canada	3.3%	1.5%
Italy	3.2%	-0.2%
China	3.2%	4.4%
Euro Area	3.1%	0.5%
Brazil	2.8%	1.0%
France	2.5%	0.7%
Mexico	2.1%	1.2%
Japan	1.7%	1.6%
US	1.6%	1.0%
Germany	1.5%	-0.3%

- Global inflation is forecast to rise from 4.7% in 2021 to 8.8% in 2022 but to decline to 6.5% in 2023 and to 4.1% by 2024.
- The slowdown in global economic activity is broad-based and sharper-than-expected, with inflation higher than seen in decades. The economic outlook depends on a successful calibration of monetary and fiscal policies, the course of the war in Ukraine, and growth prospects in China.

What are IMF's Recommendations?

- **Fighting Inflation:**
 - The priority must be to tackle inflation, normalize central bank balance sheets, and raise real policy rates above their neutral level fast enough and for long enough to keep inflation and inflation expectations under control.
- **Monetary and Fiscal Policy Coordination:**
 - Fiscal policy also needs to support monetary policy in softening demand in economies with excess aggregate demand and overheating labor markets.
 - Without price stability, any gains from future growth are at risk of being eaten up by a renewed cost-of-living squeeze.
 - Central banks need to act resolutely while communicating clearly the objectives and the steps to achieve them.
- **Protecting the Vulnerable during the Adjustment:**
 - As the cost of living continues to rise, policymakers will need to protect the most vulnerable members of society from the impact of higher prices.
- **Climate Policies:**
 - Without prompt remedial action, climate change will eventually have catastrophic impacts on health and economic outcomes the world over.
 - Current global targets are not aligned with global temperature goals. Meeting these goals will require emission cuts of at least 25% by the end of the decade.
 - The ongoing energy crisis has also sharpened the energy security benefits countries can derive from transitioning to clean and reliable energy sources to steadily replace their reliance on fossil fuels with renewables and low-carbon energy sources.

What is the International Monetary Fund?

- **About:**

- The IMF was set up along with the **World Bank** after the **Second World War** to assist in the reconstruction of war-ravaged countries.
 - The two organizations agreed to be set up at a **conference in Bretton Woods in the US**. Hence, they are known as the **Bretton Woods twins**.
- **Created in 1944**, the IMF is governed by and accountable to the 190 countries that make up its near-global membership. India joined on 27th December 1945.
 - The IMF came into formal existence in December 1945.
- The IMF's primary purpose is to ensure the stability of the international monetary system — the system of exchange rates and international payments that enables countries (and their citizens) to transact with each other.
 - The Fund's mandate was updated in 2012 to include all macroeconomic and financial sector issues that bear on global stability.
- **Reports by IMF:**
 - **Global Financial Stability Report**.
 - **World Economic Outlook**.
- **World Economic Outlook**
 - It is a survey by the IMF that is usually published twice a year in the months of April and October.
 - It analyzes and predicts global economic developments during the near and medium term.
 - In response to the growing demand for more frequent forecast updates, the WEO Update is published in January and July, between the two main WEO publications released usually in April and October.

India Becomes the World's Largest Producer of Sugar

Why in News?

Recently, India has emerged as the **world's largest producer and consumer of sugar** and the **world's 2nd largest exporter**, due to the record production of more than 5000 Lakh Metric Tons (LMT) of sugarcane.

What are the Reasons for Good Production of Sugar?

- **Impressive Sugar Season (Sep-Oct):** All records of sugarcane production, sugar production, sugar

Note:

exports, cane procured, cane dues paid and ethanol production was made during the season.

- **High exports:** The exports were the highest at about 109.8 LMT without any financial assistance and earned foreign currency of about Rs. 40,000 crores.
- **Indian Government Policy Initiatives:** Timely government initiatives in the last 5 years have taken them out of financial distress in 2018-19 to the stage of self-sufficiency in 2021-22.
- **Encouraging Ethanol Production:** The Government has encouraged sugar mills to divert sugar to **ethanol** and also export surplus sugar so that mills may have better financial conditions to continue their operations.
- **Ethanol Blending with Petrol (EBP) Programme:** The National Policy on Biofuels 2018, provides an indicative target of 20% ethanol blending under the Ethanol Blended Petrol (EBP) Programme by 2025.
- **Fair and remunerative price (FRP):** The FRP is the minimum price that sugar mills have to pay to sugarcane farmers for procurement of sugarcane. It is determined on the basis of recommendations of the **Commission for Agricultural Costs and Prices (CACP)** and after consultation with State Governments and other stakeholders.
- **State Advised Price:** Although the Central government decides the FRP the state governments can also set a State Advised price which a sugar mill has to pay to the farmers.
- **Rangarajan committee (2012)** was set up to give recommendations on regulation of the sugar industry.
 - **Its recommendations:**
 - Abolition of the quantitative controls on export and import of sugar, these should be replaced by appropriate tariffs.
 - States should also undertake policy reform to allow mills to harness power generated from bagasse.

What is the Present Status of the Sugar Industry in India?

- **About:** Sugar industry is an important agro-based industry that impacts the rural livelihood of about 50 million sugarcane farmers and around 5 lakh workers directly employed in sugar mills.

- The sugar industry is the second largest agro-based industry in India after cotton.

- **Distribution:** Sugar industry is broadly distributed over **two major areas of production**- Uttar Pradesh, Bihar, Haryana and Punjab in the north and Maharashtra, Karnataka, Tamil Nadu and Andhra Pradesh in the south.

- South India has a **tropical climate** which is suitable for higher sucrose content giving a higher yield per unit area as compared to north India.

Geographical Conditions for the Growth of Sugar:

- **Temperature:** Between 21-27°C with hot and humid climate.
- **Rainfall:** Around 75-100 cm.
- **Soil Type:** Deep rich loamy soil.
- **Top Sugarcane Producing States:** Maharashtra > Uttar Pradesh > Karnataka

Challenges:

- **Uncertain Production Output:** Sugarcane has to compete with several other food and cash crops like cotton, oil seeds, rice, etc. This affects the supply of sugarcane to the mills and the **production of sugar also varies from year to year causing fluctuations in prices** leading to losses in times of excess production due to low prices.

- **Low Yield of Sugarcane:** India's **yield per hectare is extremely low** as compared to some of the major sugarcane producing countries of the world. For example, India's yield is only 64.5 tonnes/hectare as compared to 90 tonnes in Java and 121 tonnes in Hawaii.

- **Short Crushing Season:** Sugar production is a seasonal industry with a **short crushing season varying normally from 4 to 7 months in a year**.

- It causes financial loss and seasonal employment for workers and lack of full utilization of sugar mills.

- **Low Sugar Recovery Rate:** The average rate of recovery of sugar from sugarcane in India is less than 10% which is quite low as compared to other major sugar producing countries.

- **High Production Cost:** High cost of sugarcane, inefficient technology, the uneconomic process of production and heavy excise duty result in high cost of manufacturing.

- Most of the sugar mills in India are of small size with a capacity of 1,000 to 1,500 tonnes per day thus fail to take advantage of economies of scale.

Note:

OPEC+ Cuts Oil Production

Why in News?

Recently, The **Organisation of the Petroleum Exporting Countries and its allies (OPEC+)** has decided to **cut oil production by 2 million barrels per day (bpd)**.

- This is the largest cut since the beginning of the **Covid-19 pandemic**.
- US legislation in May 2022 passed the **No Oil Producing and Exporting Cartels (NOPEC) bill**, which is intended to protect **US consumers and businesses from engineered oil spikes**.

What are the Reasons for Slashing Production?

- Oil prices skyrocketed after Russia's invasion of Ukraine and have since begun to **soften over the past few months**, before dropping sharply to under USD 90 in September, 2022 due to **fears of a recession in Europe** and reduced demands from China because of **its lockdown measures**.
- The reductions **would boost prices and be extremely beneficial for the Middle Eastern member states**, to whom **Europe has turned for oil** after levelling sanctions against Russia since it invaded Ukraine.
- OPEC+ members are concerned that a **faltering global economy would reduce the demand for oil**, and the cuts are seen as **a way to protect profits**.
- Increased oil prices, which first occurred during the invasion of Ukraine, have helped Saudi Arabia, one of the founding members of OPEC, **become one of the world's fastest-growing economies**.
- It is possible that Russia might be influencing OPEC, to make it **more expensive for the West to extend energy sanctions** on Russia.

What would be its Impact?

Impact on European Countries:

- Recently, the European Union had announced its plan to implement a price cap on oil exports from Russia.
- Under the plan, countries will only be permitted to purchase Russian oil and petroleum products transported via sea that are sold at or below the price cap.
- However, the recent decision to reduce the supply is likely to keep the global oil prices high, **allowing**

Russia to continue aiming for significant revenue from its crude export.

Impact on the U.S:

- The move is likely to be highly detrimental to the US, which has **repeatedly asked the organisation to increase oil production**.
- Slashes in reduction and subsequently increased oil prices can be **particularly dangerous to the US**, who is trying to **reduce inflation rates before the midterm elections** in November 2022.

Impact on India:

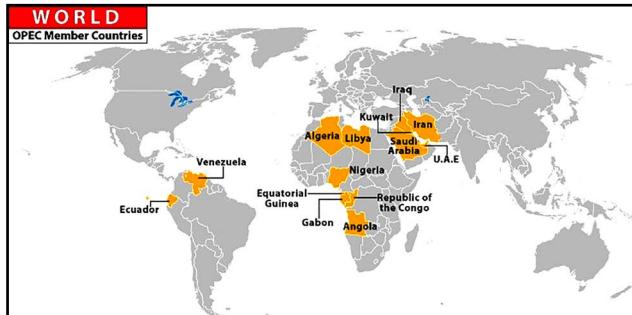
- India imports nearly **85% of its crude requirement**, the oil import bill will rise on account of the rise in prices. The rise in import bills will not only lead to **inflation** and **a rise in the Current Account Deficit (CAD) and fiscal deficit** but also weaken the rupee against the dollar and hurt stock market sentiment
 - As per **Investment Information and Credit Rating Agency (ICRA)**, for every \$10 per barrel increase in the price of the Indian crude oil basket, the CAD could widen by \$14-\$15 billion, or 0.4% of GDP.

What is OPEC+?

- Established in 1960 by founding members **Iran, Iraq, Kuwait, Saudi Arabia and Venezuela**, OPEC has since expanded and now has **13 member states**.
 - **Member countries are:** Algeria, Angola, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, United Arab Emirates, Venezuela.
 - **Qatar terminated** its membership on 1st January 2019.
- With the addition of another **10 allied major oil-producing countries**, the OPEC is known as **OPEC+**.
 - **OPEC+ countries include** 13 OPEC member countries, Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan and Sudan.
- The objective of the organization is to **"coordinate and unify the petroleum policies of its Member Countries** and ensure the **stabilisation of oil markets** in order to secure an efficient, economic and regular supply of petroleum to consumers, a steady income to producers and a **fair return on capital for those investing in the petroleum industry**.

Note:

- Previously controlled by western-dominated multinational oil companies known as the “Seven Sisters,” OPEC sought to give the oil-producing nations greater influence over the global petroleum market.
- They account for roughly **40 % of the world's crude oil** and 80 % of the globe's oil reserves, according to estimates from 2018.
- They usually **meet every month to determine how much oil the member states will produce.**
- However, many allege that **OPEC behaves like a cartel**, determining the supply of oil and influencing its price in the world market.



Nobel Prize in Economic Sciences 2022

Why in News?

The Royal Swedish Academy of Sciences has decided to award the **2022 Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel** to **Ben S. Bernanke, Douglas W. Diamond and Philip H. Dybvig** “for research on banks and financial crises.”

- **The 2021 Nobel Prize in Economic Sciences** was awarded in one half to **Canadian-born David Card** (labor economics) and the other half jointly to **Israeli-American Joshua D Angrist and Dutch-American Guido W Imbens** (analysis of causal relationships).
- Other 2022 Nobel Prizes for **Literature, Chemistry, Physics, Medicine** and **Peace** have already been announced.

Note:

Unlike the other prizes, the **economics award wasn't established in Alfred Nobel's will of 1895** but by the **Swedish central bank** in his memory. The first winner was selected in **1969**.

What Contribution have these Laureates made in the Banking System?

➤ Ben S. Bernanke:

- Ben Bernanke analysed the **Great Depression of the 1930s**, the worst **economic crisis** in modern history.
- Through statistical analysis, Bernanke demonstrated **how failing banks played a decisive role** in the global depression of the 1930s.
 - He showed **how bank runs were a decisive factor in the crisis becoming so deep and prolonged.**
 - It also helped in understanding the **importance of well-functioning bank regulation.**
- Bernanke was the head of the US central bank, the **Federal Reserve**, when the **2008 crisis hit**, and was able to “put knowledge from research into policy”.

➤ Douglas W. Diamond and Philip H. Dybvig:

- Both Diamond and Dybvig worked together to develop **theoretical models** explaining why banks exist, how their role in society makes them

Nobel Prize in Economic Sciences 2022 d | द्रिष्टि
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Winner
 Ben S. Bernanke, Douglas W. Diamond and Philip H. Dybvig for “Research on Banks and Financial Crises”.

Basis of Research

- ▀ Reason behind bank's instability and long-term consequences of a banking crisis
- ▀ Damage following bank collapse
- ▀ Failure to establish new banks after fall in economy

Significance

- ▀ The research reduces the risk of financial crisis developing into long-term depressions with severe consequences for society.

Contribution

Ben S. Bernanke:

- Analysed the Great Depression of the 1930s, and demonstrated how failing banks played a decisive role in the depression.
- Showed how bank runs were a decisive factor in the crisis becoming so deep and prolonged.
- Was the head of the US central bank, the Federal Reserve, when the 2008 crisis hit, put knowledge from research into policy.

Douglas W. Diamond and Philip H. Dybvig:

- Diamond showed how banks are better suited to assessing borrowers' creditworthiness and ensuring that loans are used for good investments.
- Worked together to develop theoretical models explaining why banks exist, how their role in society makes them vulnerable to rumors about their impending collapse, and how society can lessen this vulnerability.
- Presented a solution to bank vulnerability, in the form of deposit insurance from the government.

Indian Nobel Prize Laureates

- ▀ In 1998, Amartya Sen was awarded the Nobel Prize in Economic Sciences “for his contributions to welfare economics”.
- ▀ In 2019, Abhijit Banerjee was awarded the Nobel Memorial Prize in Economic Sciences with his wife Esther Duflo and Harvard University's Michel Kremer, for his experimental work in order to alleviate global poverty.

Note:

vulnerable to rumors about their impending collapse, and how society can lessen this vulnerability. These insights form the foundation of modern bank regulation.

- They presented a **solution to bank vulnerability**, in the form of **deposit insurance from the government**. When depositors know that the state has guaranteed their money, **they no longer need to rush to the bank** as soon as rumors start about a bank run.
- Diamond also showed **how banks perform a societally important function**. As intermediaries between **savers and borrowers**, banks are better suited to **assessing borrowers' creditworthiness** and ensuring that **loans are used for good investments**.

Railways to Bid for 16 Stations Through PPP Model

Why in News?

Recently, the railway ministry is planning to bid out 16 stations under the **public-private partnership (PPP) model**. These railway stations will be **upgraded to ensure improved basic facilities and accessibility for passengers**.

- This is in addition to the 1253 railway stations that have been identified for development under the **Adarsh Station Scheme**.

What is Public Private Partnership Model?

➤ About:

- It is an **arrangement between the government and private sector** for the provision of public assets and/or public services. Public-private partnerships allow large-scale government projects, such as roads, bridges, or hospitals, to be completed with private funding.
- In this type of partnership, investments are undertaken by the private sector entity, for a specified period of time.
- As PPP **involves full retention of responsibility by the government** for providing the services, **it doesn't amount to privatization**.
- There is a well-defined allocation of risk between the private sector and the public entity.
- The private entity is chosen on the basis of open competitive bidding and receives performance-linked payments.

- PPP route can be an alternative in developing countries where **governments face various constraints on borrowing money for important projects**.
- It can also give required expertise in planning or executing large projects.

➤ Benefits:

- The PPP model can bring **opportunities for investment**, operating efficiency and modern and clean technology.
- PPP railway projects provide for shared use of rail tracks may **lead to efficiency gains and an increased revenue basis** (or reduced cost basis) for states and private investors.
- Further, it could lead to **increased competition and modernization of railway infrastructure**.

➤ Challenges:

- PPP projects have been stuck in issues such as disputes in existing contracts, **non-availability of capital and regulatory hurdles** related to the acquisition of land.
- Indian government has a **poor record in regulating PPPs in practice, as there are delays in land acquisition**.
- Loans for infrastructure projects are believed to comprise a large share of the **non-performing asset portfolio** of public sector banks in India.
- In many sectors, PPP projects have turned into conduits of crony capitalism.
- Many PPP projects in infrastructure sector are run by "politically connected firms" which have used political connections to win contracts.
- PPP firms use every opportunity for renegotiating contracts by citing reasons like lower revenue or a rise in costs which becomes a norm in India.

What are Types of Public Private Partnership (PPP) Models?

- **Build-Operate-Transfer (BOT):** It is a **conventional PPP model** in which the private partner is responsible to design, build, operate (during the contracted period) and transfer back the facility to the public sector.
- The private sector partner has to bring the finance for the project and take the responsibility to construct and maintain it.
- The public sector will allow private sector partners to collect revenue from the users. The national highway projects contracted out by NHAI under PPP mode is a major example for the BOT model.

Note:

- **Build-Own-Operate (BOO):** In this model ownership of the newly built facility will rest with the private party.
 - On mutually agreed terms and conditions the public sector partner agrees to 'purchase' the goods and services produced by the project.
- **Build, Own, Operate, Transfer (BOOT):** In this variant of BOT, after the negotiated period of time, the project is transferred to the government or to the private operator.
 - BOOT model is used for the development of highways and ports.
- **Build-Operate-Lease-Transfer (BOLT):** In this approach, the government gives a concession to a private entity to build a facility (and possibly design it as well), own the facility, lease the facility to the public sector and then at the end of the lease period transfer the ownership of the facility to the government.
- **Design-Build-Operate-Transfer (DBFO):** In this model, **entire responsibility** for the design, construction, finance, and operation of the project for the period of concession **lies with the private party**.
- **Lease-Develop-Operate (LDO):** In this type of investment model **either the government or the public sector entity retains ownership** of the newly created infrastructure facility and receives payments in terms of a lease agreement with the private promoter.
 - It is mostly followed in the development of airport facilities.
- **Engineering, Procurement, and Construction (EPC) Model:** Under this model, the cost is completely borne by the government. Government invites bids for engineering knowledge from the private players. Procurement of raw material and construction costs are met by the government. The private sector's participation is minimal and is limited to the provision of engineering expertise. A difficulty of the model is that financial is the high financial burden for the government.
- **The Hybrid Annuity Model (HAM):** In India, the new HAM is a **mix of BOT-Annuity and EPC models**. As per the design, the government will contribute 40% of the project cost in the first five years through annual payments (annuity). The remaining payment will be made on the basis of the assets created and the performance of the developer.

What is Adarsh Station Scheme?

- **About:** Adarsh station scheme of the Ministry of Railways aims to upgrade the **suburban stations** of India to Adarsh stations. It was introduced in 2009.

- The selection of railway stations under this scheme is based on the identified need for **up-gradation of amenities**.
- **Key features:**
 - Adarsh stations will be **beautified** and upgraded with **modern facilities** like:
 - Improvement of facade of the **station building**.
 - Duly streamlining **traffic flow**
 - Improvement of **platform** surface
 - Improvement of existing **waiting halls** and **retiring rooms**
 - Toilet facilities
 - Provision of **foot over bridges**
 - Provision of **lifts** and **escalators** etc.
 - The upgradation process will be monitored by the Indian Government and Indian Railways.

International Migration Outlook 2022

Why in News?

Recently, **International Migration Outlook 2022**, a report on international migration patterns was released by the **Organisation for Economic Co-operation and Development (OECD)**.

What are the Highlights of the Report?

- **Global Scenario:**
 - After a record decrease in 2020 due to the COVID-19 crisis, **permanent-type migration to OECD countries bounced back by 22% in 2021**.
 - Family migration increased by 40% in 2021 and remained the largest category of inflows, accounting for more than four in ten new permanent immigrants to the OECD.
 - Migration in free mobility areas was less affected by the pandemic, but still fell by 17% in 2020.
 - In 2020, there were 4.4 million international students enrolled in the OECD, accounting for 10% of all tertiary students. The most important receiving countries are the United States (22%), the United Kingdom (13%) and Australia (10%).
 - The **United States remained the largest recipient of permanent immigrants in 2021** (834 000), 43% more than in 2020, and 19% less than in 2019. In the EU, the upturn in permanent-type migration (+15%) was less pronounced.

Note:

➤ **Indian Scenario:**

- Students from **China (22%) and India (10%) account for the largest share of foreign students** in OECD countries. About a third of the world's population aged 20-29 live in these two countries.
- A look at the stay rates of Indians and Chinese students who had obtained their education permit in 2015 shows that in nearly every OECD country, including Canada, Germany, Australia, New Zealand, the United Kingdom, and Japan, Indians have significantly higher retention rates than the Chinese.
- **Indian students tend to have a higher stay rate than the overall international student population.**

What is OECD?

- **About:** The OECD is an **intergovernmental economic organisation**, founded to stimulate economic progress and world trade. Most OECD members are high-income economies with a very high Human Development Index (HDI) and are regarded as developed countries.
- **Founded:** 1961.
- **Headquarters:** Paris, France.
- **Total Members:** 38.
- The most recent countries to join the OECD were **Colombia, in April 2020, and Costa Rica, in May 2021.**
- **India is not a member**, but a key economic partner.
- Reports and Indices by OECD
 - Government at a Glance
 - OECD Better Life Index.

What are the Different Types of Migration?

➤ **On the Basis of Movement Pattern**

- **Step Migration:** Migration initiating from a small settlement and moving to a larger one in the urban hierarchy over the years. Such as movement from a farm to a village, then to a town and subsequently to a suburb (if applicable) and finally into a city.
- **Circular Migration:** Cyclical migration experiences between an origin and a destination with at least one migration and return.
 - **Seasonal Migration** is a very common form of circular migration, driven by seasonal peaks in labor demand, mostly in agriculture.
 - **Return Migration** refers to a one-time emigration and returns after an extended stay outside the host territory.

- **Chain Migration:** Migration of families at different stages of the life cycle from one location to the next, who subsequently bring people from their home location to this new place.

➤ **On the Basis Decision-making Approach:**

- **Voluntary Migration:** Based on a person's free will, initiative, and desire to live in a better place and to improve their financial status, among other factors.

- **Involuntary Migration:** Based on a person's being forced out of their home due to certain unfavorable environmental and political situations.

➤ **On the Basis of Duration:**

- **Permanent Migration:** When people migrate to another place over a long distance for living there for a long period, it is called a permanent migration. For example, a person has moved from Satna (Madhya Pradesh) to Gurugram (Haryana) for better job opportunities and he planned to settle there. This type of migration will be considered permanent migration.

- **Temporary Migration:** It is migration to a country that is not intended to be permanent, for a specified and limited period of time, and usually undertaken for a specific purpose.

4th Heli-India Summit 2022

Why in News?

Recently, the Minister of Civil Aviation has inaugurated the 4th **Heli-India Summit 2022** in the Union Territory of Jammu and Kashmir.

- **Theme:** Helicopters for Last Mile Connectivity.

What are the Highlights of the Summit?

- Announcing the achievements in the Civil Aviation sector, it was noted that the country had only 74 airports from 1947 to 2014, but it now has 141, with **67 added in the last seven years.**
- It is proposed to build a civil enclave in Jammu and the Srinagar's present terminal will be expanded three times.
- Announced to develop Fractional Ownership Model and **HEMS (Helicopter Emergency Medical Services)** pilot called **Project.**

Note:

- **Fractional Ownership Model:** It helps to grow the non-scheduled operations.
 - It will lower the barrier on the cost of acquisition of helicopters and airplanes through pooled capital by multiple owners.
- **HEMS:** It is called Project Sanjeevani; a helicopter will be deployed to provide emergency medical services at AIIMS Rishikesh.
 - The helicopter will be based at the hospital at 20-minute notice and will have a service covering an area of 150 km radius.

What is the Scenario of the Civil Aviation Sector of India?

- **About:**
 - Helicopters have multifarious roles, providing urban connectivity and the other roles of helicopter service have been the **emergency medical services and disaster management during floods, rescue operations etc.**
 - The civil aviation industry in India has emerged as **one of the fastest growing industries in the country during the last three years** and can be broadly classified into **scheduled air transport service which includes domestic and international airlines, non-scheduled** air transport service which consists of charter operators and air taxi operators, air cargo service, which includes air transportation of cargo and mail.
- **Significance:**
 - India is currently the **7th largest civil aviation market in the world** and is expected to become the third-largest civil aviation market within the next 10 years.
 - India is expected to overtake **China and the United States as the world's third-largest air passenger market in the next ten years**, by 2030, according to the **International Air Transport Association (IATA)**.
 - In FY22, airports in India pegged the domestic passenger traffic to be 166.8 million, a 58.5% YoY increase, and international passenger traffic to be 22.1 million, a 118% YoY increase, as compared to FY 2020-21.
- **Opportunity:**
 - **FDI:** 100% **Foreign Direct Investment (FDI)** allowed under Automatic route for Ground Handling Services and Maintenance Repair and Overhaul Services (MRO) and for both green and brownfield projects.

- **Scope of Growth:** The Indian civil Aviation MRO market, at present, stands at around USD 900 million and is anticipated to grow to USD 4.33 billion by 2025 increasing at a CAGR of about 14-15%.
 - The nation's airplane fleet is projected to quadruple in size to approximately 2500 airplanes by 2038.
- **Connecting New Airports:** The government aims to develop 100 airports by 2024 (under the UDAN Scheme) and create world-class civil aviation infrastructure to be at par with global standards.

What are the Related Initiatives?

- **Heli-Sewa Portal:**
 - HeliSewa portal is fully online and being used by all operators for obtaining landing permissions to helipads, and it also is creating a database of helipads in the country.
- **Heli-Disha:**
 - HeliDisha, the guidance material on helicopter operations for State administration, has been distributed to 780 districts.
 - It contained all regulations and issues related to helicopter size, weight, operations, etc, and it would be distributed so that awareness about them is created in the district administrations across the country.
- **Helicopter Accelerator Cell:**
 - The Helicopter Accelerator Cell is fully active in resolving helicopter issues and the advisory group of industry representatives is helping identify problems areas.
- **Ude Desh Ka Aam Naagrik:**
 - Ude Desh ka Aam Nagrik (UDAN) was launched as a regional connectivity scheme under the Ministry of Civil Aviation in 2016.
 - It is an innovative scheme to develop the regional Aviation market.
- **Krishi UDAN 2.0 scheme:**
 - It lays out the vision of improving value realization through better integration and optimization of agri-harvesting and air transportation and contributing to agri-value chain sustainability and resilience under different and dynamic conditions.

Note:



International Relations

Highlights

- Joint Comprehensive Plan of Action (JCPOA)
- UN Peacekeeping Forces Fatalities
- Sapta Kosi High Dam Project

- Nord Stream Pipeline
- Conflict in the Korean Peninsula
- India-New Zealand Relations

Joint Comprehensive Plan of Action (JCPOA)

Why in News?

Recently, the US imposed sanctions against a Mumbai based petrochemical company, **Tibalaji Petrochem Pvt Ltd.** as it was accused of selling Iranian petroleum products.

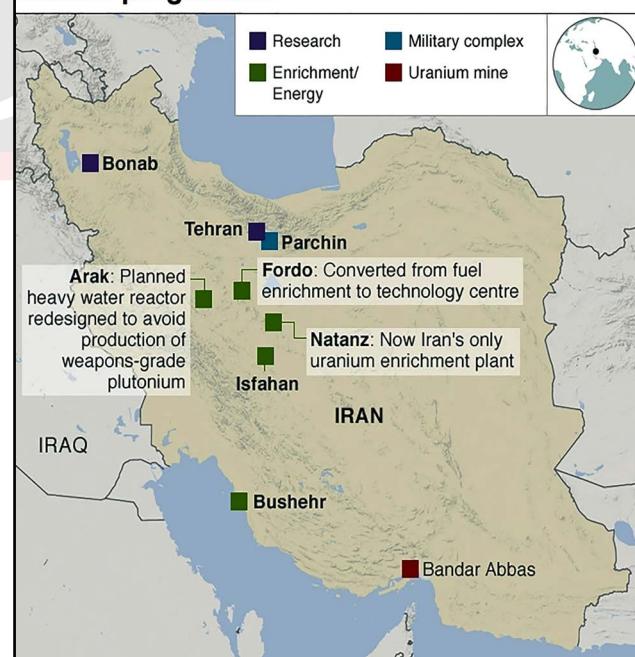
- It is the **first Indian entity to face the US designation under unilateral sanctions passed in 2018-19**, after the US walked out of the **Joint Comprehensive Plan of Action (JCPOA)**.

What was the Joint Comprehensive Plan of Action (JCPOA)?

- The deal is also known as **2015 Iran Nuclear Deal**.
- The JCPOA was the result of prolonged negotiations from 2013 and 2015 between **Iran and P5+1 (China, France, Russia, the United Kingdom, the United States + Germany)**.
- Under the deal, **Iran agreed to significantly cut its stores of centrifuges, enriched uranium and heavy-water, all key components for nuclear weapons**.
- Iran also **agreed to implement a protocol that would allow inspectors from the International Atomic Energy Agency (IAEA) to access its nuclear sites** to ensure Iran would not be able to develop nuclear weapons in secret.
- While the West **agreed to lift sanctions related to Iran's nuclear proliferation, other sanctions addressing alleged abuses of human rights and Iran's ballistic missile programme remained in place**.
- The US committed to lifting sanctions on oil exports, but continued to restrict financial transactions, which have deterred international trade with Iran.

- Nonetheless, Iran's economy, after suffering years of recessions, currency depreciation, and inflation, stabilized significantly after the deal took effect, and its exports skyrocketed.
- After US abandoned the deal in 2018** and reinstated banking and oil sanctions, **Iran ramped up its nuclear programme in earnest**, returning to approximately 97% of its pre-2015 nuclear capabilities.

Changes agreed under Iran deal to limit nuclear programme



What Happened After the US Pulled Out of the Deal?

- In April 2020, the US announced its intention to **snap back sanctions**. However, the **other partners objected** to the move, stating that **since the US was no longer part of the deal, it could not unilaterally reimpose sanctions**.

Note:

- Initially following the withdrawal, several countries continued to import Iranian oil under waivers granted by the Trump administration. A year later, the US ended the waivers to much international criticism and, by doing so, significantly curbed Iran's oil exports.
- The other powers, in an attempt to keep the deal alive, launched a barter system known as **Instrument in Support of Trade Exchanges (INSTEX)** to facilitate transactions with Iran outside the US banking system. However, INSTEX only covered food and medicine, which were already exempt from US sanctions.
- In January 2020, after the US assassinated the top Iranian general Qasem Soleimani, Iran announced that it would no longer limit its uranium enrichment.
- In September 2022, Iran and International Atomic Energy Agency officials held a round of talks to discuss the possibility of Iran's agreement to reallow inspectors back to Iran for oversight over reactors.
 - The U.S. and Iran have also exchanged their stands indirectly via the European Union for a "final draft" on rejoining the JCPOA.

What is the significance of JCPOA for India?

- Enhance Regional Connectivity:
 - Removing sanctions may revive India's interest in the Chabahar port, Bandar Abbas port, and other plans for regional connectivity.
 - This would further help India to neutralize the Chinese presence in Gwadar port, Pakistan.
 - Apart from Chabahar, India's interest in the International North-South Transit Corridor (INSTC), which runs through Iran, and will improve connectivity with five Central Asian republics, may also get a boost.
- Energy Security:
 - Due to the pressure linked to the US Countering America's Adversaries Through Sanctions Act (CAATSA), India has to bring down oil imports to zero.
 - Restoration of ties between the US and Iran will help India to procure cheap Iranian oil and aid in energy security.

Note:

UN Peacekeeping Forces Fatalities

Why in News?

According to the **United Nations Undersecretary General**, the number of fatalities among **United Nations Peacekeeping Forces (UNPKF)** in direct attacks is growing.

- Strong requirements for better training, technology, and equipment were highlighted.

What are UN Peacekeeping Forces?

- About:
 - When the **UN Security Council** approved the deployment of UN military observers to the **Middle East in 1948**, the **UN Peacekeeping Forces** were established.
 - UN peacekeeping forces aid nations in negotiating the perilous transition from war to peace.
 - To carry out several missions approved by the **UN Security Council (UNSC)** and the **UN General Assembly**, it deploys soldiers and police from all over the world and combines them with civilian peacekeepers.
 - **International Day of UN Peacekeepers** is celebrated on date **29th May** every year.
 - **2022 Theme:** People. Peace. Progress. The Power of Partnerships.
- India and UNPKF:
 - India is among the nations that send the most troops to the **United Nations Peacekeeping Forces**.
 - Example: India is the **second-highest military** and **fifth-highest police** contributing country to the **United Nations Organization Stabilization Mission in the Democratic Republic of the Congo (MONUSCO)**.
 - Over **2,60,000 Indians** have served in **49 U.N. Peacekeeping missions** since **1948**.
 - In 2007, India became the first country to deploy an **all-women contingent** to a UN Peacekeeping mission.
 - In the last six decades, **179 Indian soldiers** have died in **UN Peacekeeping operations**.

- Among “**blue helmets**” it has the greatest death toll of any nation.
 - **Blue Helmets** are the **military personnel of the UN** that work alongside the UN Police and civilian colleagues to promote “**stability, security, and peace processes**”.

What are the Most Probable Reasons for Fatalities?

- The **atmosphere** in which **peacekeeping operations** are taking place is getting worse from both a **political** and a **security point of view**.
- Many operations, especially large operations like those in **Africa**, engage soldiers against **criminal or terrorist organization** who prefer turmoil over peace and stability.

How can These Fatalities be Controlled?

- **Geographical equilibrium** and **evenness** must be maintained in **peacekeeping operations**.
- It will necessitate a great deal of effort to increase the **geographical diversification** of the nations providing police and peacekeeping forces.
- India has presented a **10-point formula** to address **security and operational challenges** faced by **United Nations peacekeeping missions** around the world.
 - To accomplish the objectives of operations, the leadership of a **peacekeeping force** must build **confidence** and ensure **efficient cooperation** with the host state.
 - **Countries participating** in peacekeeping missions must **determine the agenda**, not the Security Council.
 - With a thorough **understanding of their limits**, peacekeeping missions should be deployed sensibly.
 - **Clearly defined objectives** that are supported by **adequate resources**.
 - “**All-out efforts**” should be made to prosecute those responsible for **atrocities against peacekeepers**.
 - It is essential for ending violent conflicts and constructing global security against external threats.
 - Using **cutting-edge technology** in peacekeeping operations can help overcome security issues.
 - The **military, civilians, and mission leadership** should all be considered while evaluating a mission.

- An “**exit strategy**” should be considered for peacekeeping deployments from the beginning.
- The primary duty to safeguard people against non-state groups operating on their soil shall rest with the host government.

Sapta Kosi High Dam Project

Why in News?

Recently, **India and Nepal** have agreed to take forward the **Sapta Kosi high dam project** through further studies.

- Senior officials of the two sides have **met and reviewed the bilateral water-sector cooperation**, including the implementation of the **Mahakali Treaty**.

What is Sapta Kosi High Dam Project & Mahakali Treaty?

- **Sapta Kosi High Dam Project:**



- Sapta Kosi High Dam is a **multipurpose project** proposed to be **constructed on the Saptakoshi River of Nepal (Known as Kosi River in India)**.
- The project is primarily aimed to **control floods in south-east Nepal and northern Bihar** and to **generate hydropower**.
- The project will provide irrigation, control floods and generate 3,000 MW of electricity.

- **Mahakali Treaty:**

Note:



- The **Mahakali Treaty** was signed in 1996 over the integrated development of the **Mahakali River, including Sarada Barrage, Tanakpur Barrage and Pancheshwar project.**
- Mahakali River is also known as **Sharda River or Kali Ganga** in Uttarakhand.
 - It joins **Ghagra** river in **Uttar Pradesh**, which is a tributary of **Ganga**.

What do we know about the Kosi River System?

- The **Kosi** is a **trans-boundary river** which flows through **Tibet, Nepal and India**.
- It has its **source in Tibet** that includes the **world's highest upland**, it then drains a **large part of Nepal** before emerging onto the **Gangetic plains**.
- Its **three major tributaries**: the Sun Kosi, Arun and Tamur meet at one point just upstream of a 10 km gorge cut through the Himalayan foothills.
- The river crosses into **northern Bihar, India** where it branches into distributaries before **joining the Ganges near Kursela in Katihar district**.
- The Kosi carries the maximum amount of silt and sand after the **Brahmaputra** in India.
- It is also known as the "**Sorrow of Bihar**" as the annual floods affect about 21,000 sq. km. of fertile agricultural lands thereby **disturbing the rural economy**.

What are some other Recent Developments in India Nepal Relations?

- **Build Own Operate and Transfer (BOOT):**
 - A **Memorandum of Understanding (MoU)** was signed between the **Government of Nepal** and **Sutlej Jal Vikas Nigam (SJVN) Limited** for the project in 2008 for execution on a **Build Own Operate and Transfer (BOOT)** basis for a period of 30 years including five years of the construction period.
- **Hydropower Projects:**
 - Nepal also **invited Indian companies to invest** in the **West Seti hydropower project** in Nepal.
- **Cross-border Rail Link:**
 - The operationalisation of the **35 kilometers cross-border rail link from Jayanagar (Bihar) to Kurtha (Nepal)** will be further extended to Bijalpura (Nepal) and Bardibas (Nepal).

Nord Stream Pipeline

Why in News?

Recently, leaks were found in the pipelines comprising the **Nord Stream pipelines (Nord Stream 1 and Nord Stream 2)** located near Denmark and Sweden.

- The leaks happened just before the ceremonial launch of the **Baltic Pipe carrying gas from Norway to Poland**, which is an effort by Poland to **decrease its dependence on Russia for energy**.

What are the Nord Stream Pipelines?

- Nord Stream consists of two pipelines, **which have two lines each**.
 - Nord Stream 1 is a 1,224 km underwater gas pipeline running from Vyborg in northwest Russia to Lubmin in northeastern Germany via the Baltic Sea. It was completed in 2011.
 - **Nord Stream 2** which runs from Ust-Luga in Leningrad to Lubmin was completed in September 2021 and has the capacity to handle 55 billion cubic meters of gas per year once it becomes operational.
- The twin pipelines together can transport a combined total of 110 billion cubic metres (bcm) of gas a year to Europe for at least 50 years.

Note:

- The Nord Stream crosses the **Exclusive Economic Zones (EEZs)** of several countries including Russia, Finland, Sweden, Denmark and Germany, and the territorial waters of Russia, Denmark, and Germany.
- In Germany, the pipeline connects to the OPAL (Baltic Sea Pipeline) and NEL (North European Pipeline) which further connects to the European grid.



How War Impacted Nord Stream Supply?

- Russia had already decreased the supply of gas to Europe after the European Union imposed sanctions on Moscow for invading Ukraine.
- Flows via Nord Stream 1 were reduced to 20 % of its capacity in July 2022.
- In August 2022, Russia further plugged the **supply and stopped Nord Stream 1 completely**, citing maintenance. Gazprom had reasoned that an oil leak in a turbine on the Nord Stream 1 pipeline was behind the closure.
- The Nord Stream 2, despite being completed, could not **become operational after Germany pulled out of the project after Russia invaded Ukraine**.
- The stream was supposed to double **Russia's energy export to Europe to 110 billion cubic meters**.

- The short supply of the gas pipeline resulted in a **sudden hike in energy prices in Europe**. With the shutting down of the Nord Stream pipeline, **Europe faces a tough time ahead with winter approaching**.

What is its Significance of Nord Stream for Europe and Russia?

- **Europe:**
 - Europe requires more than **100 billion cubic metres (bcm) of natural gas** each year and around 40% of its gas comes from Russia.
 - Over the last few years, Europe has become more dependent on gas imports because of a decrease in domestic gas production. Reducing dependence on Russian gas is difficult as there are no easy replacements.
 - Many **European businesses have large investments in Nord Stream 2** and there is pressure on governments from these businesses. Finally, a reduction in gas from Russia would increase already high gas prices and that would not be popular domestically.
- **Russia:**
 - As for Russia, which has the largest natural gas reserves in the world, around **40% of its budget comes from sales of gas and oil**.
 - Nord Stream 2 is important because it **eliminates the risks related with sending gas through transit countries**, cuts operating costs by doing away with transit fees and gives direct access to its most important European customer, Germany.
 - It increases **Europe's dependence on Russia** while giving it a reliable customer.

Conflict in the Korean Peninsula

Why in News?

Recently, North Korea flew 12 warplanes near its border with South Korea, prompting the latter to scramble 30 military aircraft in response.

- Tensions have risen sharply on the **Korean Peninsula** as North Korea's recent barrage of missile tests prompted **South Korea, the United States and Japan** to conduct joint drills in response.

Note:



What is the Conflict in the Korean Peninsula?

- **Origin:**
 - The root of the conflict lies in the **Japanese occupation of Korea between 1910- 1945**.
 - When Japan was defeated in the **Second World War**, the Allied forces agreed to establish a “four-power trusteeship over Korea” at the **Yalta Conference** (1945).
 - However, the **USSR (Union of Soviet Socialist Republics)** invaded Korea and took control of the north while the south remained under the rest of the allies, mainly the USA.
 - The division of the two regions was along the **38th parallel north**, which still **continues to be the official border** dividing the **two Koreas**.
 - In 1948, the Republic of Korea (South Korea) and the Democratic People's Republic of Korea (North Korea) were established.
 - As both tried to enhance their reach, territorially and ideologically, the **Korean Conflict emerged** between the two nations.
- **The Korean War:**
 - On 25th June 1950, North Korea, backed by the USSR, launched **an attack on South Korea** and occupied most of the country.
 - In response, the United Nations force **led by the US retaliated**.
 - In 1951, the US forces led by Douglas MacArthur crossed the **38th parallel and triggered the entry of China** in support of North Korea.

- To prevent further escalation, peace talks began later in 1951.
- **India was actively involved in negotiating peace in the Korean peninsula** by engaging all the major stakeholders – **US, USSR and China**.
 - In 1952, the Indian resolution on Korea was adopted at the **United Nations (UN)**.
- On 27th July 1953, the **Korean Armistice Agreement** was signed between the UN Command, the Korean People's Army and the Chinese People's Volunteer Army.
 - It led to an official ceasefire without a Peace treaty. Thus, the war officially never ended.
 - This also led to the establishment of the **Korean Demilitarised Zone (DMZ)** – a strip of land running across the Korean Peninsula to serve as a **buffer zone between North Korea and South Korea**.
- In December 1991, North and South Korea signed a pact agreeing to refrain from aggression.

What is the US-North Korea Conflict?

- During the **Cold War era**, the US extended its **Nuclear Umbrella** (guarantee of support during a nuclear attack) to its allies i.e. South Korea and Japan.
- North Korea withdrew from the **Non-Proliferation Treaty (NPT)** in 2003 and afterwards, under present leader Kim Jong-un, it increased nuclear missile testing.
- In response to this, the US started deploying **THAAD (Terminal High Altitude Area Defence)** in South Korea in March 2017.
- The territorial conflict which started between North and South Korea has transformed into a tussle between the US and North Korea.

What are the Recent Acts of Aggression by North Korea?

- In recent years **North Korea has accelerated its nuclear programme** by **increasing its nuclear stockpile**, withdrawn from the Non-Proliferation Treaty (NPT) and has tested nuclear explosives multiple times.
- USA has deployed **THAAD (Terminal High Altitude Area Defence)** in South Korea to counter increasing missile adventurism of North Korea.
- North Korea recently **demolished the Inter-Korean Liaison Office in Kaesong**, which was established in

Note:

2018. In the absence of formal diplomatic relations, the building functioned as a de facto embassy and provided a direct communication channel for the two nations.

- Most recently in 2022, North Korea conducted a record number of missile tests.
 - It may further raise tensions by testing an intercontinental ballistic missile or conducting its first nuclear test explosion since 2017, following an old pattern of heightening tensions.

What about India's Position in Korean Conflict?

- **India's Stand:**
 - India has consistently voiced its opposition to North Korean nuclear and missile tests. However, it has maintained a neutral stance regarding sanctions.
 - Earlier, during the Korean War (1950- 53), India played a major role in a cease-fire agreement signed between both the warring sides.
- **India's Relations with North and South Korea:**
 - In May 2015, the bilateral relationship with South Korea was upgraded to 'special strategic partnership'.
 - India has a major role to play in **South Korea's Southern Policy** under which the latter is looking at expanding relations beyond its immediate region.
 - Similarly, South Korea is a major player in **India's Act East Policy** under which India aims to promote economic cooperation, cultural ties and develop strategic relationships with countries in the Asia-Pacific.
 - India has diplomatic relations with **North Korea** for over 47 years, which reflects the legacy of India's commitment to the **Non-Alignment Movement**.

India-New Zealand Relations

Why in News?

Recently, External Affairs Minister (EAM) of India has visited New Zealand and Australia.

- The meeting consisted of various geo-political issues like how India-New Zealand contributions together will shape the larger region, the Indo-Pacific region. They also discussed the present security situation in the Indo-Pacific and also the consequences arising out of the **Ukraine conflict**.



What are the Different Aspects of India-New Zealand Relations?

- **Historical Relations:** India and New Zealand have a longstanding, friendly and growing relationship. Our ties go back to the 1800s, with Indians settling in Christchurch as early as the 1850s. Larger numbers of immigrants from Punjab and Gujarat came to New Zealand in the 1890s. Indian troops fought alongside the Anzacs in Gallipoli in 1915.
- **Political Relations:** India and New Zealand have cordial and friendly relations rooted in the linkages of the Commonwealth, parliamentary democracy, and the English language. Both countries became independent in the same year and diplomatic representation of India was established in 1950 with the opening of a Trade Commission, which was later upgraded to High Commission.
 - Both countries are fellow travellers in their commitment to disarmament, global peace, North-South Dialogue, human rights, ecological preservation and combating international terrorism.
- **Cooperation on the Covid-19 pandemic:** Both countries cooperated extensively both bilaterally in fighting against the pandemic by ensuring the continuity of supply chains of essential commodities, medicines, and vaccines. Both countries also facilitated the repatriation of each other's nationals stranded in the wake of **Covid-19**.
- **Trade Relations:** 11th largest two-way trading partner with total two-way trade valued at US\$1.80 bn during 2020. Education and tourism are NZ's growth sectors with India. Indian students numbering approximately 15000 (before the pandemic) are the 2nd largest source of international students for NZ.

Note:

- The number of Indian visitors to NZ in 2018 was the 9th largest at 67,953.
 - India primarily imports logs and forestry products, wood pulp, wool, and edible fruit & nuts from NZ.
 - Indian exports to NZ mostly are pharmaceuticals/ medications, precious metals and gems, textiles and motor vehicles and non-knitted apparel and accessories.
 - India shares **Free Trade Agreements (FTAs)** with New Zealand.
- **Business Alliances:** India NZ Business Council (INZBC) and India NZ Trade Alliance (INZTA) are the two prominent organizations working to promote India-NZ trade and investment relations.
- **Cultural Relations:** All Indian festivals including Diwali, Holi, Rakshabandhan, Baisakhi, Guruparv, Onam, Pongal, etc. are celebrated with much enthusiasm all over NZ. A set of four new stamps depicting the story of Diwali has been issued by New Zealand Post in 2021. NZ has approximately 2,50,000 persons of Indian origin & NRIs, a vast majority of which has made NZ their permanent home.

What are the Different Aspects of India-Australia Relations?

- **Historical Relations:** India and Australia established diplomatic relations in the pre-Independence period, with the establishment of **India Trade Office in Sydney in 1941**. The end of the Cold War and simultaneously India's decision to launch major economic reforms in 1991 provided the first positive move towards development of closer ties between the two nations. With the passage of time, the relationship gained momentum towards a strategic relationship, alongside the existing economic engagement.

- **India-Australia Strategic Relationship:** With the changing global scenario, Australia has come to look at India as an important partner in promoting regional security and stability. This led to upgradation of bilateral relationship to a '**Strategic Partnership**', including a **Joint Declaration on Security Cooperation in 2009**. Bilateral mechanisms include high level visits, Annual Meetings of Prime Ministers, Foreign Ministers' Framework Dialogue, Joint Trade & Commerce Ministerial Commission, **India-Australia '2+2' Foreign Secretaries and Defence Secretaries Dialogue**, **QUAD**, Defence Policy Talks, Australia-India Education Council,etc.
- **Trade Relations:** Growing India-Australia economic and commercial relations **contribute to the stability and strength of a rapidly diversifying and deepening bilateral relationship** between the two countries.
- Australia is the **17th largest trading partner of India** and India is Australia's 9th largest trading partner.
 - India-Australia bilateral trade for both merchandise and services is valued at **USD 27.5 billion in 2021**.
 - India's merchandise exports to Australia grew 135% between 2019 and 2021. India's exports consist primarily of a broad-based basket largely of finished products and were **USD 6.9 billion in 2021**.
 - India's merchandise imports from Australia were **USD 15.1 billion in 2021**, consisting largely of raw materials, minerals and intermediate goods.
 - India signed a historic trade agreement with Australia in 2022, the **India-Australia Economic Cooperation and Trade Agreement** (Ind-Aus ECTA).
 - India and Australia are partners in the trilateral **Supply Chain Resilience Initiative (SCRI)** arrangement along with Japan which seeks to enhance the resilience of supply chains in the **Indo-Pacific Region**.



Note:

Social Issues

Highlights

- Global Hunger Index 2022
- Revised Beti Bachao Beti Padhao Scheme
- International Girl Child Day

- Poverty and Shared Prosperity 2022: Correcting Course
- World Mental Health Day 2022
- International Day of Rural Women

Global Hunger Index 2022

Why in News?

Barring the war-torn Afghanistan, India has performed worse than all the countries in the South Asian region in the **Global Hunger Index 2022**. It has ranked **107 out of 121 countries**.

- India ranked 101 out of 116 countries in the **Global Hunger Index (GHI) 2021**.

What is the Global Hunger Index?

- The Global Hunger Index (GHI) is a tool for comprehensively measuring and tracking hunger at global, regional, and national levels.
- GHI scores are based on the values of four component indicators:
 - Undernourishment
 - Child stunting
 - Child wasting
 - Child mortality
- The GHI score is calculated on a 100-point scale reflecting the severity of hunger - zero is the best score (implies no hunger) and 100 is the worst.
- The GHI is prepared by European NGOs of **Concern Worldwide** and **Welthungerhilfe**.
- The GHI is an **annual report** and each set of GHI scores **uses data from a 5-year period**. The 2022 GHI scores are calculated using data from 2017 through 2021.

What is the Performance of Countries on GHI 2022?

- **Global Progress:** Globally, the progress against hunger has largely stagnated in recent years; with a **global score of 18.2 in 2022** as compared to 19.1 in 2014,

there is only a slight improvement. However, the 2022 GHI score is still considered “**moderate**”.

- The plausible causes for the stagnation in this progress are overlapping crises such as conflicts among countries, **climate change**, the **economic fallout of the Covid-19 pandemic** as well as the **Russia-Ukraine war**, which has **increased global food, fuel, and fertiliser prices** and is expected to “**worsen hunger in 2023 and beyond**”.
- As per the index, there are 44 countries that currently have “serious” or “alarming” hunger levels and “without a major shift, neither the world as a whole **nor approximately 46 countries are projected to achieve even low hunger as measured by the GHI by 2030**.”

➤ Top and Worst Performers:

- **Belarus, Bosnia & Herzegovina, Chile, China and Croatia** are the top five countries in GHI 2022.
- **Chad, Democratic Republic of Congo, Madagascar, Central African Republic and Yemen** are the countries ranked at the bottom of the index.

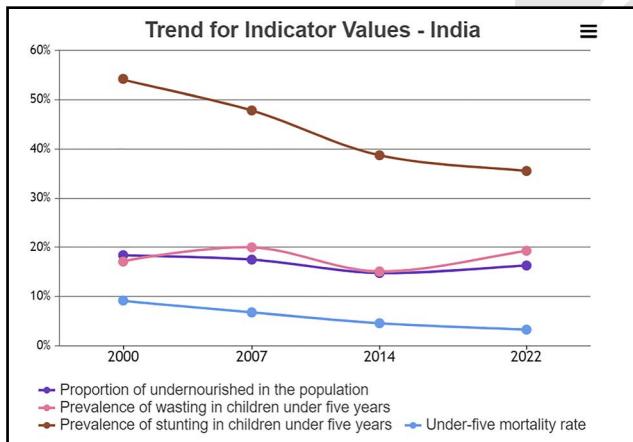
- **India and Neighboring Countries:** Among the South Asian countries, **India (107)** is ranked below **Sri Lanka (64), Nepal (81), Bangladesh (84), and Pakistan (99)**.
- India has a score of **29.1** which places it under ‘**serious**’ category.
- Afghanistan (109) is the only country in South Asia that performs worse than India on the index.
- **China, with a score of less than 5**, has topped the chart, topped the chart, together with 16 other countries.

➤ India's Performance in the Four Indicators:

- **Child Wasting:** India’s **child wasting rate (low weight for height)**, at **19.3%**, is **worse than the levels recorded in 2014 (15.1%)** and even 2000 (17.15%).

Note:

- It is the **highest for any country** in the world and drives up the region's average owing to India's large population.
- Undernourishment:** Prevalence of undernourishment has also risen in the country from **14.6% in 2018-2020 to 16.3% in 2019-2021.**
- It implies that **224.3 million people in India (out of 828 million globally)** are considered undernourished.
- The indicator measures the proportion of the population facing chronic deficiency of dietary energy intake.
- Child Stunting and Mortality:** India has shown improvement in child stunting and child mortality.
 - Child stunting (low height for age) has declined from 38.7% to 35.5% between 2014 and 2022.
 - Child mortality (mortality rate under the age of five) has dropped from 4.6% to 3.3% in the same comparative period.



What Other Similar Indices/Reports are There?

- State of Food Security and Nutrition in the World:**
 - Presented by the **Food and Agriculture Organization**, the International Fund for Agricultural Development, the **UNICEF**, the **World Food Programme** and the **World Health Organization**.
- Global Nutrition Report, 2021:**
 - It was conceived following the first Nutrition for Growth Initiative Summit (N4G) in 2013.
- National Family Health Survey (NFHS):**
 - It comprises detailed information on key domains of population, health and family welfare - fertility; family planning; **infant and child mortality; maternal**

Note:

and child health; nutrition and anaemia; morbidity and healthcare; women's empowerment etc.

Global Hunger Index 2022

About

- Measures and tracks hunger at global, regional, and national levels.
- Annual report; first published in 2006.

Prepared by

- European NGOs of Concern Worldwide and Welthungerhilfe.

GHI Indicators



Scoring

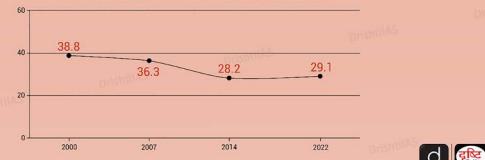
Calculated on a 100-point scale reflecting the severity of hunger - zero is the best score (implies no hunger) and 100 is the worst.

<9.9 low	10.0-19.9 moderate	20.0-34.9 serious	35.0-49.9 alarming	≥50.0 extremely alarming
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GHI 2022

- Global Average Score: 18.2 (moderate)
- India's Rank and Score: 107/121 and 29.1 (serious)
- India's Neighbours: India is ranked below Sri Lanka, Nepal, Bangladesh, and Pakistan.
- China, with a score of less than 5, is among the top 17 countries.

GHI Score Trend for India



What are India's Initiatives to Eradicate Hunger/Malnutrition?

- Eat Right India Movement:** An outreach activity organised by the **Food Safety and Standards Authority of India (FSSAI)** for citizens to nudge them towards eating right.
- POSHAN Abhiyan:** Launched by the Ministry of Women and Child Development in 2018, it targets to reduce stunting, undernutrition, anaemia (among young children, women and adolescent girls).
- Pradhan Mantri Matru Vandana Yojana:** A centrally sponsored scheme executed by the Ministry of Women and Child Development, is a maternity benefit programme being implemented in all districts of the country with effect from 1st January, 2017.
- Food Fortification:** Food Fortification or Food Enrichment is the addition of key vitamins and minerals such as iron, iodine, zinc, Vitamin A & D to staple foods such as rice, milk and salt to improve their nutritional content.

- **National Food Security Act, 2013:** It legally entitled up to 75% of the rural population and 50% of the urban population to receive subsidised food grains under the Targeted Public Distribution System.
- **Mission Indradhanush:** It targets children under 2 years of age and pregnant women for immunisation against 12 Vaccine-Preventable Diseases (VPD).
- **Integrated Child Development Services (ICDS) Scheme:** It offers a package of six services (Supplementary Nutrition, Pre-school non-formal education, Nutrition & health education, Immunisation, Health check-up and Referral services) to children in the age group of 0-6 years, pregnant women and lactating mothers.

- Protecting rights of Girl children.
- **Innovative Interventions under BBBP:** Innovations that have created a positive ecosystem/ enabling environment for girls include:
 - **Guddi-Gudda Boards:** (Display of Birth Statistics (number of Girls born vis-à-vis number of Boys) in public). Example: Jalgaon district, Maharashtra has installed digital Guddi-Gudda Display Boards.
 - **Breaking Gender Stereotypes & Challenging Son-centric Rituals:** Celebration of birth of the girl child, dedicating special day on value of girl child, plantation drives symbolizing nurturing and care for girl child. Example: Cuddalore (Tamil Nadu), Selfie with Daughters (Jind district, Haryana).

Revised Beti Bachao Beti Padhao Scheme

Why in News?

The Central Government, expanding the mandate of its flagship scheme - '**Beti Bachao Beti Padhao**' (**BBBP Scheme**) announced the inclusion of skilling of girls in **non-traditional livelihood (NTL)** options.

- At the **national conference on skilling in non-traditional livelihoods for girls**, Ministries of Women and Child Development MW&CD emphasises the importance of convergence between various departments for providing quality education to empower girls.

What is BBBP Scheme?

- **About:**
 - The Scheme was **launched** by Prime Minister on **January 22, 2015** to address the declining **Child Sex Ratio (CSR)** and related issues of women's empowerment over a life-cycle continuum.
 - It is a **Tri-ministerial effort** of the Ministries of Women and Child Development (**MW&CD**), Ministry of Health & Family Welfare (**MH&FW**), and **Ministry of Education**.
- **Main Objectives:**
 - Prevention of gender-biased sex-selective elimination.
 - Ensuring survival & protection of the girl child.
 - Ensuring education and participation of the girl child.

What are the New Changes in the BBBP Scheme?

- Some of the new aims in the revised BBBP scheme include:
 - **Ensuring 1% increment in enrolment at the secondary level** particularly in **STEM (Science, Technology, Engineering, Mathematics) subjects**.
 - Skilling of girls and women every year (mainly in **non-traditional livelihoods**)
 - Raising awareness about **safe menstrual hygiene**
 - Promulgating **elimination of child marriages**
- Other Changes to the Scheme:
 - The MW&CD also emphasised the convergence between various departments for providing quality education (including vocational) to empower girls.
 - A MoU was signed between the MW&CD and Ministries Skill Development and Entrepreneurship, and Minority Affairs to **ensure adolescents complete their education, build skills, and enter the workforce** in a diverse range of professions.
 - A national committee headed by the Secretary of MW&CD, formed under the larger **Mission Shakti** will review the implementation of the BBBP scheme with states and UTs.

What are the Other Initiatives to Support Girl Children?

- **Beti Bachao Beti Padhao**
- **Sukanya Samriddhi Yojana**
- **CBSE Udaan Scheme**

Note:

- National Scheme of Incentive to Girls for Secondary Education
- National Girl Child Day
- Scheme for Adolescent Girls
- Sukanya Samridhi Yojana

What are Non-Traditional Livelihoods (NTL)?

- “Non-Traditional Livelihoods” (NTLs) – sectors and jobs where participation of women is and has historically been conventionally low or absent. Like STEM (Science, Technology, Engineering, Mathematics) subjects due to gender-based categorization of the work, in the society.

International Girl Child Day

Why in News?

Every year, International Girl Child Day is observed on 11th October 2022.

Why do We celebrate International Girl Child Day?

- **History:**
 - First time in history, the **Beijing Declaration and Platform for Action** in 1995, proposed an action plan to advance the rights of girls.
 - In 2011, the **United Nations General Assembly** adopted **Resolution 66/170** to declare 11th October as the International Day of the Girl Child.
- **Theme for 2022:** “Our time is now—our rights, our future”
- **Significance:**
 - The day is observed to **recognise girls' rights and the unique challenges girls face around the world.**
 - The International Day of the Girl Child **focuses attention on the need to address the challenges girls face and to promote girls' empowerment** and the fulfilment of their human rights.
 - Also, **Women's empowerment and gender equality** are integral to all 17 **Sustainable Development Goals.**
 - The achievement of gender equality is the fifth of 17 **SDGs** laid out in the Sustainable Development Agenda.

- Justice, inclusion, economic growth, and a sustainable environment can only be achieved by ensuring the rights of women and girls across all the goals.

What is the State of Girl Child in India?

- **About:**
 - According to the recently released report “**Accidental Deaths & Suicides in India Report 2021**” by **National Crime Records Bureau (NCRB)**:
 - Crime against children surpassed the **pre-pandemic levels after declining in 2020 due to Covid-related restriction.**
 - In 2021, **1.49 lakh such cases were recorded**, higher than 1.48 lakh in 2019.
 - The data published by the NCRB is specifically grim for the eastern states of India:
 - **Sikkim has the highest rate of sexual offences** against children followed by Kerala, Meghalaya, Haryana and Mizoram.
 - **West Bengal and Odisha are among the top five states** (along with Maharashtra, MP and UP) which account for **47.1% of the total crimes committed against children** across the country.
 - There were 9,523 cases of crimes against children recorded alone in West Bengal in 2021.
- **Issues related to Girl Child:**
 - **Female Infanticide and Foeticide:**
 - India has one of the highest rates of female foeticide in the world.
 - The **Census of 2011** has recorded the **lowest ever sex ratio of 914 in the age group 0-6 years** with 3 million missing girls; from 78.8 million in 2001 to 75.8 million in 2011.
 - **Child Marriage:**
 - Each year, at least 1.5 million girls under 18 get married in India. Nearly 16% of adolescent girls aged 15-19 are currently married.
 - While child marriage has declined, it has been marginal: from 27% in 2015-16 to 23% in 2019-20, according to **National Family Health Survey (NFHS) 5.**
 - **Devoid of Education:**
 - Girls are encouraged and also engaged more in household work and drop out of school at an early age.

Note:

- A study by the International Centre for Research on Women has found that **girls out of school are 3.4 times more likely to be married** or have their marriage already fixed than girls who are still in school.

➤ **Related Initiatives:**

- **Beti Bachao Beti Padhao:**
 - Launched in 2015 with the aim to **address sex selective abortion** and the **declining child sex ratio** which was at 918 girls for every 1,000 boys in 2011.
- **Sukanya Samriddhi Yojana:**
 - Launched in 2015, in order to **promote the welfare of girl children**. It encourages parents to invest and build funds for the future studies and marriage expenses of the girl's children.
- **CBSE Udaan Scheme:**
 - UDAAN is a project launched by the CBSE to **address the low enrolment of girl students in prestigious engineering institutions** and the **teaching gap** between school education and engineering entrance examinations.
- **National Scheme of Incentive to Girls for Secondary Education (NSIGSE):**
 - It is a **Centrally Sponsored Scheme** launched in 2008, which aims to **promote enrollment of girl children in the age group of 14-18** at secondary stage, especially those who passed Class VIII and to encourage the secondary education of such girls.
- **Scheme for Adolescent Girls:** Government is also implementing **Scheme for Adolescent Girls**, which aims to facilitate, educate and empower Adolescent Girls (AGs) so as to enable them to become self-reliant and aware citizens.

Poverty and Shared Prosperity 2022: Correcting Course

Why in News?

Recently, the **World Bank** released a report titled "**Poverty and Shared Prosperity 2022: Correcting Course**".

What are the Findings of the Report?

➤ **Global Poverty Reduction:**

- Global poverty reduction has **been slowing down since 2015** but the **Covid pandemic** and the **war in Ukraine** have completely reversed the outcomes.
- By 2015, the **global extreme-poverty rate had been cut by more than half**.
 - Since then, poverty reduction has slowed in tandem with subdued global economic growth.
- As such, the **global goal of ending extreme poverty by 2030** would not be achieved.

➤ **People living below the Poverty Line:**

- In 2020 alone, the **number of people living below the extreme poverty line rose by over 70 million**; the largest one-year increase since global poverty monitoring began in 1990.
- Given current trends, 574 million people—nearly 7% of the world's population—will still be living on less than USD 2.15 a day in 2030, with most in Africa.

➤ **Rise in Inequalities:**

- The **poorest people bore the steepest costs of the pandemic**: Income losses averaged 4% for the poorest 40%, double the losses of the wealthiest 20% of the income distribution.
- Global inequality rose, as a result, for the first time in decades.
- Global median income declined by 4% in 2020—the first decline since measurements of median income began in 1990.

What are the Suggestions?

- National policy reforms can help restart progress in reducing poverty.
- Stepped-up global cooperation will also be necessary.
- In fiscal policy, governments should act promptly on three fronts:
 - Avoid Broad Subsidies, increase targeted cash transfers:**
 - Half of all spending on energy subsidies in low- and middle-income economies go to the richest 20% of the population who consume more energy.
 - Cash transfers are a far more effective mechanism for supporting poor and vulnerable groups.
 - Focus on Long-Term Growth:**
 - High-return investments in education, research and development, and infrastructure projects need to be made today.

Note:

- In a time of scarce resources, **more efficient spending and improved preparation for the next crisis will be key.**
- **Mobilize Domestic Revenues without Hurting the Poor:**
 - **Property taxes and carbon taxes can help raise revenue** without hurting the poorest.
 - So can broadening the base of personal and corporate income taxes.
 - If sales and excise taxes do need to be raised, **governments should minimize economic distortions** and negative distributional impacts by simultaneously using targeted cash transfers to offset their effects on the most vulnerable households.

What is the State of Poverty in India?

- **About:**
 - According to the World Bank published the paper titled '**Poverty has Declined over the Last Decade But Not As Much As Previously Thought**'.
 - Extreme poverty in India was **12.3% points lower in 2019 compared with 2011**, as poverty headcount rate declined from 22.5% in 2011 to 10.2% in 2019, with a comparatively sharper decline in rural areas.
 - Poverty reduction was higher in rural areas compared with urban India as rural poverty declined from 26.3% in 2011 to 11.6% in 2019, while in urban areas the decline was from 14.2% to 6.3% in the corresponding period.
- **Poverty Estimation:**
 - Poverty estimation in India is carried out by **NITI Aayog's task force** through the calculation of poverty line based on the data captured by the **National Sample Survey Office** under the Ministry of Statistics and Programme Implementation (MOSPI).
 - Poverty line estimation in India is based on the **consumption expenditure and not on the income levels**.
- **Recent Measures Taken:**
 - **Integrated Rural Development Programme (IRDP)**
 - **Pradhan Mantri Awas Yojana**
 - **National Old Age Pension Scheme**
 - **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005**

- **Deendayal Antyodaya Yojana - National Rural Livelihood Mission (DAY-NRLM)**
- **National Urban Livelihood Mission**
- **Pradhan Mantri Kaushal Vikas Yojana**
- **Pradhan Mantri Jan Dhan Yojana**

World Mental Health Day 2022

Why in News?

On the occasion of **World Mental Health Day (10th October)**, the Lancet released a report titled "**Ending Stigma and Discrimination in Mental Health**" and called for **radical action to end stigma and discrimination associated with mental health**.

What are the Findings of the Report?

- **Prevalence of Mental Health Condition:**
 - Nearly one billion people globally are living with a mental health condition.
 - One out of seven in the age bracket of **10–19-year-olds suffers from a mental condition**.
 - These people experience **a double threat** – the impact of the condition itself and the damaging social consequences of **stigma and discrimination**.
 - The **Covid-19 pandemic** helped highlight the **urgent mental health situation across the world**.
 - There was an estimated 25 % rise in the **prevalence of depression and anxiety in the first year of the pandemic**.
- **Impact:**
 - 90% of people living with mental health conditions feel negatively impacted by stigma and discrimination.
 - Stigma can "**cause social exclusion and disempowerment of people with mental health conditions** leading to **discrimination and human rights violations**, including problems in accessing healthcare, challenges in securing employment, and increased likelihood of health complications leading to early death.
- **Indian Scenario:**
 - Though there is a gradual reduction of stigma in India, it continues to be a **real and present problem**.

Note:

- Women with a diagnosis of severe mental disorder and their family members do face more stigma which has **ramifications for marriage and employment preventing social inclusion.**
- The Indian media, especially the visual media like television serials continue to portray mental illness negatively.

➤ **Suggestions:**

- There should be **immediate action from governments**, international organisations, employers, healthcare provider and media organisations, along with **active contributions from people with lived experience**, to work together to eliminate mental health stigma and discrimination.
- Employers are to **promote full access to educational opportunities**, work participation and return-to-work programmes for people with mental health conditions and the school curriculum **should include sessions for students to improve understanding of mental health conditions.**
- There is a need to empower and support **people with lived experience of mental health conditions to play active roles in stigma reduction efforts.**

Why is World Mental Health Day Celebrated?

➤ **About:**

- World Mental Health Day is marked on 10th October every year to spread awareness and education about mental health issues across the world.
 - The first time World Mental Health Day was observed was on 10th October, 1992.
- The day was started as an **annual activity of the World Federation for Mental Health** by the then Deputy Secretary-General Richard Hunter.

➤ **Theme for Year 2022:**

- Making mental health for all a global priority.

What Initiatives are Taken by India to Promote Mental Health?

➤ **National Mental Health Program:**

- To address the huge burden of mental disorders and shortage of qualified professionals in the field of mental health, the government has been implementing the National Mental Health Program (NMHP) since 1982.

➤ **Mental HealthCare Act 2017:**

- The Mental Health Care Act (MHCA) 2017 came into force in 2018 to meet the **requirements of the United Nations Convention on the Rights of Persons with Disabilities** which India ratified in 2007.

➤ **Kiran Helpline:**

- It offers **mental health rehabilitation services** with the objective of early screening, first-aid, psychological support, distress management, promoting positive behaviours, etc.

➤ **Manodarpan:**

- The Ministry of Human Resources Development (MHRD) (now **Ministry of Education**) launched it under **Atmanirbhar Bharat Abhiyan**. It is aimed to provide psychosocial support to students, family members and teachers for their mental health and well-being during the times of Covid-19.

➤ **Mental Health and Normalcy Augmentation System (MANAS):**

- In 2021, the government of India launched MANAS (Mental Health and Normalcy Augmentation System) mobile App to promote **mental wellbeing across age different groups.**

International Day of Rural Women

Why in News?

Every year, International Day of Rural Women is celebrated on 15th October.

Why do we Celebrate the International Day of Rural Women?

➤ **Background:**

- The idea of honouring rural women with a special day was put forward by international NGOs at the Fourth World Conference on Women in Beijing in 1995.
- The first International Day of Rural Women was observed on 15th October 2008. This new international day was established by the General Assembly in its resolution 62/136 in 2007.

➤ **About:**

Note:

- The day aims to **create awareness about the fact that the engagement of rural women diversifies family livelihood**, yet their efforts largely go unappreciated.
- It recognizes “the critical role and contribution of rural women, including indigenous women, in enhancing agricultural and rural development, improving food security and eradicating rural poverty.”
- **Theme for 2022:**
 - “Rural Women, key for a world free from hunger and poverty.”

What are the Challenges Faced by Rural Women Workers in India?

- **Incomplete Presentation of Data:**
 - The rural economy suffers when **women stop looking for work** because they believe there is no work available, often incorrectly described as “dropping out” or “Leaving the market”.
- **Absence of Pay Parity:**
 - In the field of manual labour work, **women are being paid less than men in terms of piece rate** due to physical constraints in lifting heavy weights.
- **Lack of Education:**
 - Majority of women construction workers are not registered as “**Construction Workers**” and therefore **ineligible for any benefit** accruing to them from the Construction Workers’ Welfare Board.
 - The paid formal jobs go to men and women with higher educational qualifications, leaving women with education till secondary level for non-agricultural, construction, house care and other roles.
- **Limitation of MGNREGA:**
 - The **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)**, a labour demand-driven programme, is limited to providing only 100 days of paid labour on public works projects per year.
 - For the rest of the period, **women workers have to continuously look for alternative sources of income to meet expenses.**

➤ **Financial Constraints:**

- What the women earn from multiple tasks, for which there are no fixed rates is in no way equal to the amount of labour they do.
- **Due to non-availability of sufficient funds and lack of knowledge**, they’re most vulnerable to land in debt traps.

What Initiatives Taken for the Upliftment for Rural Women Workers?

- **e-Shram Portal:**
 - **e-Shram Portal** was launched to register 38 crore unorganised workers such as construction labourers, migrant workforce, street vendors, and domestic workers, among others.
- **The Mahila Kisan Sashaktikaran Pariyojana (MKSP):**
 - Launched in 2011, it is aimed at **imparting skill development and capacity building** programmes for rural women.
 - This scheme was introduced as a sub component of **DAY-NRLM (Deendayal Antyodaya Yojana — National Rural Livelihoods Mission)** and implemented through State Rural Livelihoods Mission (SRLM) across India.
- **Pradhan Mantri Kaushal Vikas Yojana (PMKVY):**
 - Launched in 2015, it aims to train over 40 crore people in India in different skills by 2022. It aims at vocational training and certification of Indian youth for a better livelihood and respect in the society.
- **Pradhan Mantri Jan-Dhan Yojana (PMJDY)**
 - **PMJDY** has boosted confidence and prospects of rural women participation in economic activities. The Jan Dhan campaign has ensured access to financial services, viz, banking/ savings and deposit accounts, remittance, credit, insurance, pension in an affordable manner to rural women.
- **Other Initiatives**
 - **Pradhan Mantri Matru Vandana Yojana (PMMVY)**
 - **Pradhan Mantri Garib Kalyan Ann Yojana**
 - **Sub-Mission on Agricultural Mechanization Scheme**
 - **PM-KISAN Scheme**



Note:

Science & Technology

Highlights

- Uniform Safety Standards for EVs
- Alzheimer Disease
- National Young Superintendents of Police Conference and Police Expo
- Role of Nanomaterials in Solving Environmental Issues
- Nobel Prize in Chemistry 2022
- Nobel Prize in Physics 2022
- Nobel Prize 2022 in Medicine/ Physiology
- Nobel Prize in Physiology or Medicine 2022
- Lassa Fever
- Global Artificial Intelligence Summit & Awards
- India's Space Ecosystem
- ISRO's Next-Gen Launch Vehicle
- Detection of Barium in the Exoplanet Atmospheres

Uniform Safety Standards for EVs

Why in News?

To establish **uniform safety standards for electric vehicles (EVs)**, India will begin its first ever testing of EVs from April 1, 2023.

- This comes amid concerns over **multiple instances of fires in electric two-wheelers and four-wheelers** in recent months.

What are the Key Points about EV Testing?

- **Current Scenario:**
 - As of now, there are **no centralised testing facilities for EVs in India** and manufacturers have their own benchmarks.
 - In June 2022, the first major step towards standardisation of battery technology was taken when the **Bureau of Indian Standards** issued **performance norms for lithium-ion battery packs** and traction systems in line with broader ISO norms.
- **Latest Update:**
 - The task for procuring the infrastructure needed to test battery-powered vehicles has been vested in the Pune-based **Automotive Research Association of India (ARAI)**.
 - The Ministry of Heavy Industries has **allocated Rs 44 crore** to ARAI to set up the requisite **infrastructure for testing, certification, and development of electric and hybrid vehicles**.

➤ Significance:

- The EV testing push complements the government's redoubled focus on electric vehicles as well as on other forms of alternative fuel with a larger aim to reduce its crude import bill.
- As per the Union Minister of Road Transport and Highways, the **government is targeting to go all-electric** in terms of **new car sales in the country by 2030**.
- Adherence to the uniform standards would **enhance product reliability, performance, and safety**.
- It would also **make the entry barrier slightly tougher for non-serious players** and ensure that only serious players get into production.

Note:

- Globally, there is **no single EV standard**. Japan, China and countries in Europe and North America have safety standards that promote different norms in four key areas: **safety, charging connectors, charging topology and charging-related communications**.
- India is set to broadly follow the same philosophy for its testing standards — updating them as technology evolves.

What are Electric Vehicles?

- **About:**
 - An EV **operates on an electric motor** instead of an internal combustion engine and **has a battery instead of a fuel tank**.
 - In general, EVs have **low running costs** as they have fewer moving parts and are also environmentally friendly.

Note:

- In India, the fuel cost for an EV is approximately **80 paisa per kilometer**.
- **Current Scenario of EVs in India:**
- The **push for Electric Vehicles (EVs)** is driven by the **global climate agenda** established under the **Paris Agreement** to reduce carbon emissions in order to limit global warming.
 - As of June 2022, India had **over 1.3 million electric vehicles — 50% of which are three-wheelers**, a bulk of the remaining vehicles being two-wheelers, with four-wheelers making up the rest.
- **India's Initiatives to Support EVs:**
- Localisation of EV manufacturing through **Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles Scheme-II (FAME-II)**
 - **PLI schemes for manufacturers in the automobile, automotive components and Advanced Chemistry Cell (ACC)** to develop indigenous supply chains for critical EV components.
 - The government also **revised its guidelines for charging infrastructure** by including a revenue-sharing model for use of public land.
 - To boost sales, there also exist **consumer-centric incentives - tax exemptions, subsidies and interest subvention schemes** to trigger a mass demand for EV mobility options.
 - In April 2022, the **NITI Aayog** released the **draft battery swapping policy for Electric Vehicles (EVs)** in the country.
 - The Ministry of Road Transport and Highways recently extended the rollout of **amendments to EV battery testing standards**- Automotive Industry Standards-156 (or AIS-156) and AIS-038 to a staggered two-phased implementation (first from December 1, 2022 and second from March 31, 2023).
 - The **AIS-156** includes motor vehicles in the L category — those with less than four wheels and an electric powertrain.
 - The second amendment — AIS-038 — regulates vehicles with electric power trains for M category (those with four wheels and used to carry passengers) and N category (electric four-wheelers used to carry both goods and passengers).
- **Recent Issues Related to EVs:**
- There have been **increased instances of electric vehicles catching fire**. The reasons for fire may include:
 - Manufacturing defects
 - External damage
 - Faults in the deployment in the battery management system, and
 - Faulty charging in some cases
 - The Covid-19 pandemic and the **US-China trade war** has **disrupted supply chains** thus making the **critical components of EV prohibitively expensive**.
 - Indian manufacturers are also struggling to source **lithium-ion batteries**.
 - The **semiconductor shortage** which began at the end of 2021 has still not been resolved completely and has **hindered multiple industries**.
 - A similar challenge can adversely impact India's upcoming EV industry in terms of **high price volatility** and **supply disruptions** of these elements.

Alzheimer Disease

Why in News?

Researchers have discovered a drug named Lecanemab that **reduces cognitive decline in patients with early Alzheimer's**, making it one of the **first neuroprotective treatments for the disease**.

What is the Significance of the Findings?

- There are a **few pills that improve memory** in early stages but they do not help in the other facets of Alzheimer's. There is certainly a need for such neuro-protective drugs for dementia and there are several drugs in the pipeline.
- The **increasing lifespan and very high burden of diseases**, such as diabetes, hypertension, and obesity, are expected to "dramatically" increase the prevalence of dementia in India.
 - Dementia is an umbrella term for a group of disorders that lead to impaired memory, decision-making and social skills.
- The Dementia in India report 2020 estimates that there are **5.3 million people over the age of 60 years living with dementia in India**, with the prevalence projected to increase to 14 million by 2050.

Note:

What is Alzheimer's Disease?

➤ **About:**

- It is a neurological disorder which causes brain cells to degenerate and die. This leads to loss of memory, problems with words in speaking or writing, poor judgment, changes in mood and personality, confusion with time or place, etc.
 - At the first stage, these symptoms are mild but they become more severe with time.
- **Alzheimer's is the most common cause of dementia among older adults.**
- Alzheimer's disease is thought to be caused by the abnormal build-up of proteins in and around brain cells. One of the proteins involved is called amyloid, deposits of which form plaques around brain cells and the other protein is called tau.
 - Tau is a protein that when it occurs in tangled formations in the brain of Alzheimer patients, disrupts the ability of neurons to communicate with one another in the brain.
- Alzheimer's is an incurable disease, as the death of brain cells cannot be reversed.
- Women have a higher risk of having Alzheimer's disease than men.

➤ **Treatment:**

- There is **currently no known cure for Alzheimer's disease**. Treatment addresses several areas:
 - Helping people maintain brain health.
 - Managing behavioural symptoms.
 - Slowing or delaying symptoms of the disease.

National Young Superintendents of Police Conference and Police Expo

Why in News?

Recently, The Union Minister of State for Home Affairs addressed the inaugural function of the 4th National Youth Superintendents of Police Conference and Police Expo.

What are the Key Highlights of the Event?

➤ **About:**

- **The Police Expo** focuses on latest technologies in areas, such as, Body Armour, Mine Protective

Vehicles (MPVs), Less than Lethal Technologies, Advanced Weaponry, Latest Communication Equipment, Surveillance Equipment, Coastal Security, Drone & Anti-Drone Technologies, **Cyber Security/Cyber Crime Management** and Big Data & Predictive Analytics for effective delivery of Police Services to citizens.

➤ **Theme:**

- Innovation and Research in Cybercrime Management, Drones and Counter Drones.

➤ **Key Areas of Discussion:**

- **Indian Cyber Crime Coordination Center (I4C):**
 - **I4C** was approved in 2018 to deal with the increasing cases of cybercrimes in a coordinated and effective manner.

● This coordination center has seven components, of which a significant component is located at the **National Cyber Research and Innovation Center** (Bureau of Police Research and Development).

The other six components are:

- National Cyber Crime Threat Analytics Unit
- National Cyber Crime Reporting Portal
- National Cyber Crime Training Centre
- Cyber Crime Ecosystem Management Unit
- National Cyber Crime Forensic Laboratory Ecosystem
- Platform for Joint Cyber Crime Investigation Team.

● This state-of-the-art Centre is located in New Delhi.

- **Crime and Criminal Tracking Network and System (CCTNS):**

● **Background:**

■ **Crime and Criminal Tracking Network & Systems (CCTNS)** is a plan scheme conceived in the light of experience of a non-plan scheme namely - **Common Integrated Police Application (CIPA)**.

● **Objectives:**

- Make the Police functioning citizen friendly and more transparent by automating the functioning of Police Stations.
- Improve delivery of citizen-centric services through effective usage of Information Communication Technology.

Note:

- Provide the Investigating Officers of the Civil Police with tools, technology and information to facilitate investigation of crime and detection of criminals.
- **Status:**
 - It has been implemented in all 16,347 police stations across the country and in 99% police stations, 100 percent FIRs are being registered directly in CCTNS.
- **Usage of Drones:**
 - **Drones** can be useful in combat operations, surveillance, communication in remote areas for internal security, border security and security in remote areas.
 - **Drones** can also be used for transportation of medicines, food and essential commodities and for search and rescue operations in areas affected by natural calamities and disasters.
 - **Digital mapping of property** is being done with the help of drones, and in the near future, new avenues of employment can be generated by setting up soil testing laboratories in villages with the help of drone services.
 - **Drones** can also help farmers and fishermen in timely delivery of their produce with minimum damage and it will also be easier to spray pesticides on crops with minimum efforts.

What are India's Initiatives for Cyber Crime & Drones?

- **Bharat Drone Mahotsav**
- **Drone Rules 2021**
- **Drone Shakti Scheme**
- **Indian National Security Council**
- **Computer Emergency Response Team (CERT-In)**
- **Cyber Swachhta Kendra**
- **Cyber Surakshit Bharat**

Role of Nanomaterials in Solving Environmental Issues

Why in News?

The use of modern technology like nanomaterials or Carbon Dots (CD) **may offer solutions to environmental issues like water pollution.**

Note:

- The urban development of modern society has resulted in the introduction of harmful and toxic pollutants into waterbodies, disturbing the integrity of the aquatic environment.
- Novel technological developments like **nanotechnology** provide innovative solutions for sustainable and efficient environmental cleanup.

What is Nanotechnology?

- **About:**
 - Nanotechnology is the **use and the development of techniques to study physical phenomena** and develop new material and devices structures in the physical size range from 1 to 100 nanometres (nm).
 - Nanotechnology **influences almost all areas of our lives**, including manufacturing, electronics, computers and information technologies, medicine, the environment and energy storage, chemical and biological technologies and agriculture.

Nanotechnology in India:

- The emergence of nanotechnology in India has **witnessed the engagement of a diverse set of players**, each with their own agenda and role.
- Presently nanotechnology in India is mostly a government-led initiative. Industry participation has very recently originated.
- Nanotechnology R&D barring a few exceptions is largely being ensued at public-funded universities as well as research institutes.

What are Carbon Dots?

- **About:**
 - CDs are **one of the youngest members of the carbon nanomaterial family**.
 - They were discovered in 2004 and have an average diameter of less than 10 nanometres.
 - CDs possess remarkable optical properties, which differ peculiarly based on the precursor used for synthesis.
 - They are becoming more popular as candidates in applications such as sensing and bioimaging due to their good electron donors and acceptors.
 - Bioimaging relates to methods that non-invasively visualise biological processes in real time.
 - Moreover, **CDs are inexpensive, highly biocompatible**, and environment-friendly.

➤ **Role of CDs in Managing Environmental Issues:**

○ **Pollutant Sensing:**

- CDs provide an excellent possibility for fluorescence and colourimetric environmental pollutants detection.
- They are widely used as a fluorescent nanoprobe for pollutant detection because of their high fluorescence emission.
- They also enable the detection of pollutants with colour change by the colourimetric method.

○ **Contaminant Adsorption:**

- The technology can provide many surfaces adsorption sites due to their small size and large specific surface area.

○ **Water Treatment:**

- CDs can also be useful for water treatment as they are promising nano-fillers in fabricating thin-film nanocomposite membranes where they can form chemical bonds with other compounds.
- CDs have been produced from water hyacinth waste, which showed green fluorescence under UV light. They were also proven to be fluorescent sensors to detect herbicides causing trouble in aquatic bodies.

○ **Pollutant Degradation:**

- The technology can also be useful for pollutant degradation by providing a cutting-edge approach for next-generation photocatalysis.
 - Photocatalysis includes reactions that take place by utilising light and a semiconductor.
- Organic pollutants in polluted water can act as electron and hole transferring agents, while carbon dots act as photosensitiser.

○ **Antimicrobial:**

- Antimicrobial mechanisms of CDs mainly include physical/mechanical destruction, oxidative stress, photocatalytic effect and inhibition of bacterial metabolism.
- CDs in contact with the bacteria cell under visible or natural light could efficiently generate reactive oxygen species.
- This can damage **Deoxyribonucleic Acid (DNA)** or Ribonucleic Acid (RNA), causing bacteria death.

What is Categorization

of Green Synthesis of Carbon Dots?

- Generally, the synthesis of carbon dots can be categorised into “top-down” and “bottom-up” methods.
- The **top-down approach** converts large carbon structures into quantum-sized carbon dots by laser ablation, arc discharge, and chemical or electrochemical oxidation.
- In the **bottom-up method**, CDs are produced from carbonising small molecule precursors by pyrolysis, carbonisation, hydrothermal processes or microwave-assisted synthesis.

Nobel Prize in Chemistry 2022

Why in News?

Carolyn R Bertozzi, Morten Meldal and K Barry Sharpless have been awarded the **Nobel Prize 2022 in Chemistry** “for the development of Click Chemistry and Bioorthogonal Chemistry”.

- **Sharpless** (won second time) came up with the term ‘click chemistry’ and worked extensively on it.
- **Meldal**, independently of Sharpless, came up with a special chemical structure called ‘triazole’ which has many significant applications.
- **Bertozzi** took the next step of developing click reactions that could work inside living organisms — ‘bioorthogonal’ reactions (a term she coined).
- **The 2021 Nobel Prize in Chemistry** was awarded to **Benjamin List and David MacMillan** for the development of **asymmetric organocatalysis**.

Note:

K Barry Sharpless shared the 2001 Nobel Prize with William S. Knowles and Noyori Ryōji for “Developing the First Chiral Catalysts”.

What is the Nobel Winners’ Contribution in Click Chemistry?

➤ **Concept (Coined by Sharpless):**

- Click Chemistry is a minimalistic form of chemistry in which molecular building blocks can quickly and efficiently snap together. It is a form of simple and reliable chemistry, where reactions occur quickly, and unwanted by-products are avoided.

Note:

- The concept of Click Chemistry was **coined by Barry Sharpless around the year 2000**, he found that **instead of forcing carbon atoms**, the building blocks of organic matter, to bond with each other in the process of building molecules, it's easier to link smaller molecules with complete carbon frameworks.
- The central idea is to **choose simple reactions between molecules** that have a "stronger intrinsic drive" to bond together, resulting in a faster and less wasteful process.
- **Significance:** Chemists often try to recreate complex chemical molecules found in nature, and this has applications, among other things, in the field of medicine – how to target and block pathogens in cells. However, this process can be complicated and time-consuming.
 - Click chemistry, the robust method for building molecules, cannot provide exact copies of natural molecules but it will be possible to find molecules that fulfil the same functions.
- **Azide - Alkyne Cycloaddition (Meldal and Sharpless):**
 - In the 2000s, **Meldal and Sharpless (independent of each other)** provided the **crown of Click Chemistry** – the **copper catalysed azide-alkyne cycloaddition**.
 - Meldal found that **adding copper ions to a reaction between an alkyne and an acyl halide** created a **triazole**, a stable ring-shaped chemical structure that's a **common building block in pharmaceuticals, dyes and agricultural chemicals**. Adding copper ions **helped control the reaction and create just one substance**.
 - Together, the **alkyne and the azide combined to make a triazole**. Azide is an **N_3 (Nitride Ion)** organic compound, whereas an alkyne is a hydrocarbon with at least one carbon-carbon triple bond.
 - This simple and effective chemical reaction is now widely used in the **development of drugs, mapping Deoxyribonucleic Acid (DNA), and creating materials that are more fit for purpose, among many other things**.
- **Bioorthogonal Reactions (Bertozzi):**
 - These reactions **work inside living organisms without disrupting the normal chemistry of the cell**.

- Its use in combination with nanotechnology can lead to further developments in diverse areas of **biomedicine, such as molecular bioimaging, targeted delivery, in situ drug activation, study of cell-nanomaterial interactions, biosensing, etc.**
- Using bioorthogonal reactions, **researchers have improved the targeting of cancer pharmaceuticals**.

How did Bertozzi develop Cancer Fighting Click Chemistry?

➤ Spotting Glycans:

- While researching **glycans**, an elusive type of **carbohydrate found on the surface of cells that is crucial to the immune system**, Carolyn R Bertozzi wanted to attach fluorescent molecules to glycans so they could be **easily spotted**.
 - Bertozzi turned to the **same azide used by Sharpless and Meldal**. The azide not only avoids interacting with other parts of the cell, but it's also **safe to introduce in living beings**.
- In 2004, she developed an **alternate click chemistry reaction** that worked **without toxic copper**, making it safe for living cells.
- Bertozzi work is being used to **identify glycans on the surface of tumour cells** and block their **protective mechanisms that can incapacitate immune cells**.
 - This method is currently in **clinical trials for people with advanced cancer**. Researchers have also begun developing "**clickable antibodies**" that can help **track tumours and accurately deliver doses of radiation to cancer cells**.

Nobel Prize in Chemistry 2022

About

+ Carolyn R Bertozzi, Morten Meldal and K Barry Sharpless for the development of Click Chemistry and Bioorthogonal Chemistry.

+ Sharpless coined the concept of 'click chemistry'. Meldal came up with a special chemical structure called 'triazole'. Bertozzi took the next step of developing click reactions that could work inside living organisms – 'bioorthogonal' reactions (a term she coined).

+ They have brought chemistry into the era of functionalism.



Carolyn R Bertozzi Morten Meldal K Barry Sharpless

Findings of Research

Concept of Click Chemistry

+ Coined around year 2000, it is a synthetic form of chemistry that provides the building blocks for quick and reliable reactions.

+ It is a form of simple and reliable chemistry, where reactions occur quickly, and unwanted by-products are avoided.

+ Sharpless found that instead of forcing carbon atoms, the building blocks of organic matter, to bond with each other in the process of building molecules, it's easier to link two molecules with complete carbon frameworks.

Azide-Alkyne Cycloaddition

+ Copper-catalyzed reaction between an alkyne and an acyl halide creates a triazole.

+ It is a stable ring-shaped chemical structure that's a common building block in pharmaceuticals, dyes and agricultural chemicals.

+ Azide is an N_3^- (Nitride Ion) organic compound, whereas an alkyne is a hydrocarbon with at least one carbon-carbon triple bond.

Bioorthogonal Reactions

+ These reactions work inside living organisms without disrupting the normal chemistry of the cell.

+ Its use in combination with nanotechnology can lead to further developments in diverse areas of biomedicine, such as molecular imaging, targeted delivery etc.

+ Bertozzi, using the work of Sharpless and Meldal, came up with an efficient and innovative method to map glycans, which are carbohydrate-based polymers made by all living organisms.

+ Bertozzi focused on glycans on the surface of tumour cells. Glycans appear to protect tumours from the body's immune system, as they mask the immune cells that show up.

+ Her bioorthogonal reactions are now contributing to more targeted cancer treatments, among many other applications.



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Note:

Nobel Prize in Physics 2022

Why in News?

- The **Nobel Prize in Physics for 2022** was awarded to **John F. Clauser, Alain Aspect and Anton Zeilinger** for their work in **quantum mechanics** and **Cancer mechanics** by the **Royal Swedish Academy of Sciences**.
- In 2021, the **Nobel Prize in Physics** was awarded to **Syukuro Manabe and Klaus Hasselmann** (jointly) for their research on climate models and to **Giorgio Parisi** for his work on the interplay of disorder and fluctuations in physical systems.
- The **Nobel Prize for 2022 in Physiology or Medicine** was awarded to Svante Pääbo for his research in the field of genomes of extinct hominins and human evolution.

What is Quantum Mechanics and Quantum Entanglement?

- Mechanics is the branch of physics that **deals with the movement and interaction of various bodies**. **Mechanics has two parts - classical and quantum**.
 - **Classical or Newtonian mechanics** is the mathematical study of the motion of **macroscopic objects** and the forces that affect them.
 - **Quantum mechanics** is a subfield of physics that describes the **behavior of particles — atoms, electrons, photons** and almost everything in the **molecular and sub molecular realm**.
 - One important difference in the behaviour of quantum systems, when compared to classical rigid bodies, is the **concept of entanglement**.
- **Quantum entanglement** is a phenomenon by which a pair of subatomic particles are **allowed to exist in a shared state where they have complementary properties**, such that by measuring the properties of one particle, one can automatically know the properties of the other particle.
 - This is true regardless of how far apart the two particles are transported.
 - Quantum entanglement was **first elucidated by Erwin Schrödinger** in 1935, leading to his well-known **cat paradox**.

What is Bell Inequality?

- In the 1960s, **John Stewart Bell** developed the mathematical inequality - **Bell Inequality** which states that if there are **hidden variables**, the correlation between the results of a large number of measurements will **never exceed a certain value**.
 - Quantum mechanics predicts that a certain type of experiment will violate Bell's inequality, thus resulting in a stronger correlation than would otherwise be possible.

What is the Experiment?

- The laureates have been awarded for their experiments with **entangled photons** (quantum entanglement), establishing the **violation of Bell inequalities**, and pioneering **quantum information science**.
- John F. Clauser developed John Bell's ideas, leading to a practical experiment which supported quantum mechanics by clearly violating a Bell inequality **implying that quantum mechanics cannot be replaced by a theory that uses hidden variables**.
- Alain Aspect **developed the setup**, using it in a way that closed an important loophole.
 - He was able to switch the measurement settings after an entangled pair had left its source, so the setting that existed when they were emitted could not affect the result (as some loopholes remained after John Clauser's experiment).
- Anton Zeilinger was chosen for his **innovative use of entanglement and Bell pairs** both in research and application such as **quantum cryptography**.
 - His research group demonstrated a phenomenon called **quantum teleportation**, which makes it possible to **move a quantum state from one particle to the one at a distance**.

How is the Experiment Significant?

- The development of experimental tools has laid the foundation for a new era of technology based on quantum information.
- It will help in utilising the **special properties of individual particle systems to construct quantum computers, improve measurements, build quantum networks, establish secure quantum encrypted communication (quantum cryptography) and precise timekeeping** as is done in **atomic clocks**.

Note:

NOBEL PRIZE IN PHYSICS 2022

JOHN F. CLAUSER, ALAIN ASPECT AND ANTON ZEILINGER

* Field of Research: Experiments with entangled photons (quantum entanglement), established the violation of **Bell inequalities**, and pioneering quantum information science.

* Key Terms

- * **Quantum Mechanics:** A subfield of physics that describes the behavior of particles - atoms, electrons, photons etc. - in the molecular and sub molecular realm.
- * **Quantum Entanglement:** A phenomenon by which a pair of subatomic particles are allowed to exist in a shared state where they have complementary properties; by measuring the properties of one particle, one can automatically know the properties of the other particle (regardless of how far apart the two particles are transported).
- * **Bell Inequality:** Developed by **John Stewart Bell**, it states that if there are hidden variables, the correlation between the results of a large number of measurements will never exceed a certain value.
- * **Significance:** It will help in constructing **quantum computers**, improving measurements, building **quantum networks**, establishing secure quantum encrypted communication (**quantum cryptography**) and in **precise timekeeping** as is done in atomic clocks.

Indian Nobel Prize Laureates:

- * **Sir Chandrasekhara Venkata (CV) Raman:** Won the Nobel Prize for Physics in 1930 for the discovery of Raman Effect. Raman Effect is the phenomenon of change in wavelength in light rays that are deflected. It forms the basis for Raman spectroscopy which is used by chemists and physicists to gain information about materials.
- * **Subramanyan Chandrasekhar:** Won the Nobel Prize in Physics 1983 for "his theoretical studies of the physical processes of importance to the structure and evolution of the stars". He also determined the upper limit of a white dwarf's mass which is referred to as **Chandrasekhar limit**.

Nobel Prize 2022 in Medicine / Physiology

Why in News?

Recently, the 2022 **Nobel Prize for Physiology or Medicine** has been awarded to Swedish geneticist Svante Pääbo for his **research in the field of genomes of extinct hominins and human evolution**.

- In 2021, the honour went to two United States-based scientists, **David Julius** and **Ardem Patapoutian** for their **discoveries of receptors for temperature and touch**.

What are the Key Highlights of Svante Paabo's Research?

- **Human Evolution:** Homo sapiens, **first appeared in Africa approximately 300,000 years ago**, while closest known relatives, **Neanderthals**, developed outside Africa and populated Europe and Western

Asia from around 400,000 years until 30,000 years ago, at which point they went extinct.

- **Genome Sequencing of Neanderthals:** After sequencing Neanderthals' genes it is found that **archaic gene sequences from our extinct relatives influence the physiology of present-day humans**.
- For e.g., the **Denisovan version of the gene EPAS1** confers an advantage for **survival at high altitudes** and is common among **present-day Tibetans**.
 - Other examples are Neanderthal genes that affect our immune response to different types of infections.
- **Discovery of Denisova:** In 2008, a 40,000-year-old fragment from a finger bone was discovered in the **Denisova cave in the southern part of Siberia**.
- The DNA Sequencing of this bone had led to the **discovery of a previously unknown hominin, which was given the name Denisova**.
- **Coexistence of Different Human Species:** The ancestors of modern humans, Neanderthals and Denisovans co-existed for about 20,000 years, during which they not only interacted with each other but also inter-bred.
- In modern day humans with European or Asian descent, approximately 1-4% of the genome originates from the Neanderthals.
 - Further, gene flow had also occurred between Denisova and Homo sapiens. This relationship was first seen in populations in Melanesia and other parts of South East Asia, where individuals carry up to 6% Denisova DNA.
- **Novel Methodology:**
- It is **not easy to amplify and sequence ancient DNA** because it is highly fragmented and full of contamination from microbes like fungi and bacteria. Over time, DNA tends to degrade and become chemically modified.
 - Therefore, **Pääbo decided to study mitochondrial DNA from Neanderthals**.
 - Mitochondria, popularly called the powerhouse of the cell, is an organelle inside the cell that has its own DNA.
 - Although the mitochondrial genome is small and only contains a fraction of genetic information in the cell, it is present in thousands of copies. This increases the chance of its **successful sequencing**.

Note:

➤ **Significance:**

- The conceptual breakthrough is of paramount importance in **understanding human evolution**.
- Dr Pääbo's research has **resulted in the rise of a new scientific discipline called Paleogenomics**, which is the study and analysis of genes of ancient or extinct organisms.

Who were Neanderthals?

- Neanderthals, the closest relatives of the present-day human species, lived in Europe and West Asia – as far as southern Siberia and the Middle East – before they disappeared around 30,000 years ago.

Nobel Prize in Physiology or Medicine 2022
Winner: Svante Pääbo

About

- Swedish geneticist **Svante Pääbo** for his research in the field of genomes of extinct hominins and human evolution.
- His research led to the rise of **new field of paleogenomics**, the branch of science based on the reconstruction and analysis of genomic information in extinct species.

Findings of Research

- Sequencing an entire Neanderthal genome to reveal the link between extinct people and modern humans.
 - Neanderthal is an ancient group of humans.
- Discovery of a previously unknown human species called the Denisovans, from a 40,000-year-old fragment of a finger bone discovered in Siberia.
 - Hominins, of which only one species—Homo sapiens—currently exists, are members of the family Hominidae.
- In the past, Homo sapiens had encountered and interbred with Neanderthals and Denisovans.
 - Neanderthals lived in western Eurasia, whereas Denisovans populated the eastern parts of the continent.
- Gene transfer had occurred from these now extinct hominins to Homo sapiens following the migration out of Africa around 70,000 years ago.
 - For instance, the Denisovan version of the gene EPAS1 confers an advantage for survival at high altitude and is common among present-day Tibetans.
 - Other examples are Neanderthal genes that affect our immune response to different types of infections.
- Pääbo's discoveries have generated new understanding of human evolutionary history.

Novel Methodology

- It is not easy to amplify and sequence ancient DNA because it is highly fragmented and full of contamination from microbes like fungi and bacteria. Over time, DNA tends to degrade and become chemically modified.
- Therefore, Pääbo decided to study mitochondrial DNA from Neanderthals.
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Lassa Fever

Why in News?

Recently a study has found that Climate change may aid the **spread of Lassa fever**, which is endemic to parts of west Africa, to the Central and Eastern parts of the African continent in the next 50 years.

What are the Findings?

- There would be a **600% jump in the number of people exposed to the virus** that causes Lassa fever.
- The number of people at risk of exposure would rise to 453 million by 2050 and 700 million by 2070, up from about 92 million in 2022.
- An estimated 80 % of infections are mild or asymptomatic. But the remaining 20 % can cause haemorrhaging from the mouth and gut, low blood pressure and potential permanent hearing loss.
- Temperature, rainfall and the presence of pastureland areas are **key factors that contributed to the transmission** of the Lassa virus.
- If the virus is **successfully introduced and propagated in a new ecologically suitable area**, its growth would be limited over the first decades.

What is Lassa Fever?

- **About:**
- The Lassa fever-causing virus is found in West Africa and was **first discovered in 1969 in Lassa, Nigeria**.
 - The virus is a **single-stranded RNA virus** belonging to the virus family **Arenaviridae**.
 - The fever is spread by rats and is primarily found in countries in West Africa including Sierra Leone, Liberia, Guinea, and Nigeria where it is endemic.
 - Mastomys rats have the potential to spread the deadly Lassa virus.
 - The death rate associated with this disease is low, at around 1%. But the death rate is higher for certain individuals, such as pregnant women in their third trimester.
 - According to the **European Centre for Disease Prevention and Control**, about 80% of the cases are asymptomatic and therefore remain undiagnosed.
- **Transmission:**
- A person can become infected if they come in contact with household items of food that is contaminated with the urine or feces of an **infected rat (zoonotic disease)**.
 - It can also be spread, though rarely, if a person comes in contact with a sick person's infected bodily fluids or through mucous membranes such as the eyes, nose or the mouth.
- **Symptoms:**
- Mild symptoms include **slight fever, fatigue, weakness and headache**.

Note:

- Serious symptoms include bleeding, difficulty breathing, vomiting, facial swelling, pain in the chest, back, and abdomen and shock.
 - Death can occur from two weeks of the onset of symptoms, usually as a result of multi-organ failure.
- **Treatment:**
- The **antiviral drug ribavirin seems to be an effective treatment** for Lassa fever if given early on in the course of clinical illness.
 - There are no vaccines currently licensed for the prevention of Lassa fever.

 Viral outbreak
LASSA FEVER

What is this disease?

Lassa fever is an animal-borne, or zoonotic, acute viral illness; It was discovered in 1969 in **Lassa, Nigeria**



Caused by Lassa virus, a member of the arenavirus family of viruses

Spread by rats. Mastomys rats are said to have the potential to spread the virus

 **Lassa fever does not spread through casual contact like hugging, shaking hands, or sitting near someone**

Global Artificial Intelligence Summit & Awards

Why in News?

The Union Minister of Commerce and Industry addressed the 3rd edition of **Global Artificial Intelligence Summit & Awards (GAISA)**, and articulated that **Artificial Intelligence** can help India be a developed nation by 2047.

What is GAISA?

- The third AI Summit has been organized by **AICRA (All India Council For Robotics & Automation)** and is focusing on the areas of **defence, healthcare, agriculture, smart cities, mobility and education** in partnership with the government.

Note:

- **AICRA** sets up standards in the **robotics & automation and education industry**, helping organizations and professionals to solve difficult technical problems, while enhancing their leadership and personal career capabilities.

- GAISA-Global Artificial Intelligence Summit focuses on the **prominence of AI in human lives & business industries**.
- The aim is to develop a roadmap on **how to use the AI ecosystem and startups for the benefit of society**.
- It has set up **multidisciplinary groups** to break down the silos in which different stakeholders have been working and to **find technological solutions for the key sectors of our society**.

What is Artificial Intelligence?

➤ About:

- It describes the **action of machines accomplishing tasks that have historically required human intelligence**.
- It includes technologies like **machine learning, pattern recognition, big data, neural networks, self-algorithms** etc.
- The origin of the concept can be traced back to **Greek mythology, although it is only during modern history** when stored program electronic computers were developed.
- **Example:** Millions of algorithms and codes are there around humans to understand their commands and perform human-like tasks. Facebook's list of suggested friends for its users, a pop-up page, telling about an upcoming sale of the favourite brand of shoes and clothes, that comes on screen while browsing the internet, are the work of artificial intelligence.

➤ Complex Technology:

- AI involves **complex things such as feeding a particular data** into the machine and making it react as per the different situations.
- It is basically about **creating self-learning patterns where the machine can give answers** to the never answered questions like a human would ever do.

How Can AI Help India in the Development Process?

- The **Make in India** program when juxtaposed with AI technology, will enable India to become the factory of

the world providing both equipment and technology to the world.

- In India, there is a huge talent pool available that will **definitely help in exploring newer ways to take AI in every sector** of economic activity.
- The government is using AI to redefine the way it works such as **Unified Logistics Interface Platform (ULIP)**, which is leveraging AI to **improve the entire logistics ecosystem of the country**.
- Initiatives like **PM GatiShakti** National Master Plan, which aims at developing our infrastructure smarter; **Open Network for Digital Commerce (ONDC)**, which aims at democratising E-commerce, GeM which has made a significant impact for government procurement - all these are **leveraging AI to bring efficiency and better delivery of services**.
- With the meaningful contribution by Industry, startups, incubators and academia, India is **going to emerge as the hub of the artificial intelligence revolution** across the world.
- AI can play a crucial role in empowering the lives of farmers, fishermen and the **MSME (Micro, Small and Medium Enterprises)** sector.

India's Space Ecosystem

Why in News?

Recently, Indian Space Conclave was organized to celebrate the one-year anniversary of the Indian Space Association (ISPA).

- The Indian space economy is set to reach USD 13 billion by 2025, according to a **joint report** prepared by EY (Ernst and Young) and the Indian Space Association (ISPA).

What are the Findings of the Report?

- The space-launch segment would grow at a **CAGR (Compound Annual Growth Rate) of 13%**, spurred by growing private participation, latest technology adoption and low cost of launch services.
- The satellite services and application segment will form the **largest share of the space economy** accounting for 36% of the **Space ecosystem by 2025**.
- The country's **satellite-manufacturing opportunity** will reach USD 3.2 billion by the year 2025. In 2020 it was USD 2.1 billion.
 - Satellite manufacturing would be the **second fastest-growing segment in the Indian space economy**.

What is ISPA?

➤ About ISPA:

- It was launched in 2021, and is the premier industry association of space and satellite companies. It is also part of the Government's approach to **space reforms based on 4 pillars**.
 - **Allowing the private sector freedom of innovation.**
 - **Government playing the enabler's role.**
 - **Preparing youngsters for the future.**
 - **Treating the space sector as a resource for the progress of the common man.**
- ISPA aspires to be the **collective voice of the Indian Space industry**. ISPA will be represented by leading domestic and global corporations that have advanced capabilities in space and satellite technologies.

➤ Objectives:

- ISPA will undertake **Policy Advocacy and engage with all stakeholders** in the Indian Space domain, including the Government and its Agencies, to make **India self-reliant**, technologically advanced and a leading player in the space arena.
- It will work towards **building global linkages for the Indian space industry** to bring in critical technology and investments into the country to create more high skill jobs.

➤ Significance:

- One of the main goals of the organization is to supplement the government's efforts towards **making India a global leader** in commercial space-based excursions.
- Of late, ISRO's rockets have been carrying the payload and communication satellites of various countries; now, private players will also look to touch on this space with the new organisation.
- Several private sector companies have shown an interest in India's space domain, with **space-based communication networks** coming to the fore.

What is the Need for Reforms of the Space Sector?

➤ To increase the Scale of the Sector:

- Indian Space Research Organisation (ISRO) is centrally funded and its annual budget is between Rs 14-15,000 crore, and most of this is used in building rockets and satellites.

Note:

- The size of the space economy in India is small. To increase the scale of the sector, **it is imperative for private players to enter the market.**
- ISRO is planning to share knowledge and technology, such as manufacturing rockets and satellites, to all the private players.
 - The United States, Europe, Russia — all have space industries with big players like Boeing, SpaceX, Airbus, Virgin Galactic, etc.
- **Reforms in Private Players:**
 - There have always been private players in the sector, but **this has been entirely in manufacture of parts and sub-systems.** There is a need to provide a **fillip to industry to be able to manufacture rockets and satellites.**
 - Private players **can bring in the innovation needed for developing** space-based applications and services.
 - Additionally, the **demand for these services is soaring worldwide and in India, with satellite data, imageries** and space technology being used across most sectors.

What are the Related Initiatives taken?

- **IN-SPACE:**
 - IN-SPACE was launched to provide a level playing field for private companies to use Indian space infrastructure.
 - It acts as a single-point interface between Indian Space Research Organisation (ISRO), and everyone who wants to participate in space-related activities or use India's space resources.
- **NewSpace India Limited (NSIL):**
 - Announced in Budget 2019, its aim is to use research and development carried out by ISRO over the years for commercial purposes through Indian industry partners.

ISRO's Next-Gen Launch Vehicle

Why in News?

Indian Space Research Organisation (ISRO) is developing a **Next-Gen Launch Vehicle (NGLV)** to replace operational systems like the **Polar Satellite Launch Vehicle (PSLV).**

- Launch Vehicles are used to carry spacecraft to space. India has two operational launchers, PSLV and Geosynchronous Satellite Launch Vehicle (GSLV).

What is NextGen Launch Vehicle?

- **About:**
 - In NGLV, ISRO is looking at a cost-efficient, three-stage to orbit, reusable heavy-lift vehicle with a payload capability of ten tonnes to **Geostationary Transfer Orbit (GTO).**
 - Its robust design allows bulk manufacturing, modularity in systems, sub-systems and stages and minimal turnaround time.
- **Features:** It will feature **semi-cryogenic propulsion** (refined kerosene as fuel with liquid oxygen (LOX) as oxidiser) for the booster stages.
- **Use:** Potential uses will be in launching **communication satellites, deep space missions, future human spaceflight and cargo missions.**

What are other Launch Vehicles Developed by ISRO?

- **Satellite Launch Vehicle (SLV):** The first rocket developed by ISRO was simply called SLV, or Satellite Launch Vehicle.
 - It was followed by the Augmented Satellite Launch Vehicle or ASLV.
- **Augmented Satellite Launch Vehicle (ASLV):** SLV and ASLV both could carry small satellites, weighing up to 150 kg, to lower earth orbits.
 - ASLV operated till the early 1990s before PSLV came on the scene.
- **Polar Satellite Launch Vehicle (PSLV):** PSLV's first launch was in 1994, and it has been ISRO's main rocket ever since. Today's PSLV, however, is vastly improved and several times more powerful than the ones used in the 1990s.
 - It is the **first Indian launch vehicle** to be equipped with liquid stages.
 - PSLV is the most reliable rocket used by ISRO to date, with 52 of its 54 flights being successful.
 - It successfully launched two spacecraft – **Chandrayaan-1** in 2008 and **Mars Orbiter Spacecraft** in 2013 – that later travelled to Moon and Mars respectively.
- **Geosynchronous Satellite Launch Vehicle (GSLV):** GSLV is a much more powerful rocket, meant to carry heavier satellites much deeper into space. To date, GSLV rockets have carried out 18 missions, of which four ended in failure.
 - It can take 10,000 kg of satellites to lower the earth's orbits.

Note:

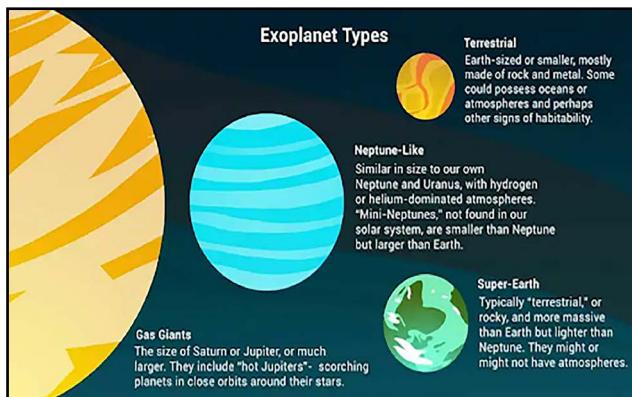
- The indigenously developed Cryogenic Upper Stage (CUS), forms the third stage of GSLV Mk II.
- Mk-III versions have made ISRO entirely self-sufficient in launching its satellites.
- Before this, it used to depend on the European Arianne launch vehicle to take its heavier satellites into space.



Detection of Barium in the Exoplanet Atmospheres

Recently, in a new study, scientists have detected barium in the upper atmosphere of two giant exoplanets for the first time.

- Ultra-hot Jupiters are a class of hot gaseous planets that matches the size of Jupiter, but they have short orbital periods, unlike Jupiter.



What are Exoplanets?

- An exoplanet or extrasolar planet is a **planet outside the Solar System**. The first confirmation of detection of exoplanets occurred in 1992.
- More than 4,400 exoplanets have been discovered till now.

- They are very hard to see directly with telescopes. They are hidden by the bright glare of the stars they orbit. So, astronomers use other ways to detect and study exoplanets such as looking at the effects these planets have on the stars they orbit.

What are the Findings of the Study?

- The exoplanets are **two ultra-hot Jupiters** — WASP-76b and WASP-121b — which orbit their host stars WASP 76 and WASP 121.
 - The former is about **640 light-years away** from the Earth and the latter around 900 light-years away.
 - Both **WASP-76b and WASP-121b complete one orbit in two days**.
 - Surface temperatures in these bodies reach as high as 1,000 degrees Celsius. These bodies have **unique features owing to their high temperatures**. For instance, WASP-76b experiences iron rain.
- The presence of hydrogen, lithium, sodium, magnesium, calcium, vanadium, chromium, manganese and iron in the atmosphere of the WASP-76 b has also been confirmed in addition to barium.
- In WASP 121b, they confirmed the presence of lithium, sodium, magnesium, calcium, vanadium, chromium, manganese, iron and nickel.
- Additionally, the team found elements such as cobalt and strontium. They also found indications of titanium in the exoplanet.

What are the Characteristics of Barium?

- About:**
 - Barium, which is slightly harder than lead, has a silvery white luster when freshly cut.
 - It readily **oxidizes when exposed to air** and must be protected from oxygen during storage.
 - In nature it is always found combined with other elements.
 - It is very light and its density is half of that of iron.
- Uses:**
 - Barium is often **used for spark-plug electrodes** and in vacuum tubes as a drying and oxygen-removing agent. As well as fluorescent lamps: impure barium sulfide phosphorescence after exposure to light.
 - Its **compounds are used by oil and gas industries** to make drilling mud. Drilling mud simplifies drilling through rocks by lubricating the drill.
 - Barium compounds are also used to make paint, bricks, tiles, glass, and rubber.
 - Barium nitrate and chlorate give fireworks a green colour.

Note:

Environment & Ecology

Highlights

- Conserving Vultures
- Namdapha National Park
- World Sloth Bear Day
- World Migratory Bird Day 2022
- Post-Facto Environmental Clearances
- Global Methane Pledge: GMCCA Forum

- Corbett Tiger Reserve: Uttarakhand
- Holistic Water Management System
- India lags in Biomass Co-firing Targets
- A Climate Risk Index for Marine Life
- Climate Tipping Points
- Galápagos Islands

Conserving Vultures

Why in News?

According to a recent study, **vultures mostly forage outside Protected Areas (PAs)** and if threats such as poison-laced carcasses are removed from these places, the decline in vulture populations can be stemmed.

What are the Findings of the Report?

➤ About:

- **Vultures avoided areas with high livestock density** when feeding, which suggests that vultures did not use cattle as a main food source and avoided areas with high human habitation.
- The finding of the study regarding cattle not being the main food source of vultures did not hold true for India.
 - The drastic crash in vulture populations in India was due to the use of diclofenac in veterinary treatment, mainly on cattle. So clearly, vultures fed on livestock.

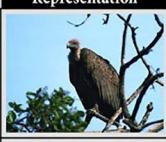
➤ Suggestions for Conservation:

- Understanding their habitat use, and even more importantly their behaviour while in certain habitats, like outside of protected areas, is thus critical for their conservation.
- It is vital to identify and remove threats near nesting and roosting sites, and to provide them with food and water.

What about the Vultures Species in India?

➤ About:

- It is one of the **22 species of large carrion-eating birds** that live predominantly in the tropics and subtropics.
- They act an **important function as nature's garbage collectors** and help to keep the environment clean of waste.
- Vultures also play a valuable role in keeping wildlife diseases in check.
- **India is home to 9 species of Vulture** namely the Oriental white-backed, Long-billed, Slender-billed, Himalayan, Red-headed, Egyptian, Bearded, Cinereous and the Eurasian Griffon.
 - Most of these 9 species face dangers of extinction.
- Bearded, Long-billed, Slender-billed, Oriental white-backed are protected in the Schedule-1 of the **Wildlife Protection Act 1972**. Rest are protected under 'Schedule IV'.
- **International Union for Conservation of Nature (IUCN):**

Sr. No.	Name of the Vulture Species	IUCN status	Pictorial Representation
1.	Oriental White-backed Vulture (Gyps Bengalensis)	Critically Endangered	
2.	Slender-billed Vulture (Gyps Tenuirostris)	Critically Endangered	

Note:

3.	Long-billed Vulture (<i>Gyps Indicus</i>)	Critically Endangered	
4.	Egyptian Vulture (<i>Neophron Percnopterus</i>)	Endangered	
5.	Red-Headed Vulture (<i>Sarcogyps Calvus</i>)	Critically Endangered	
6.	Indian Griffon Vulture (<i>Gyps Fulvus</i>)	Least Concerned	
7.	Himalayan Griffon (<i>Gyps Himalayensis</i>)	Near Threatened	
8.	Cinereous Vulture (<i>Aegypius Monachus</i>)	Near Threatened	
9.	Bearded Vulture or Lammergeier (<i>Gypaetus Barbatus</i>)	Near Threatened	

➤ **Threats:**

- Poisoning from diclofenac that is used as a medicine for livestock.
- Loss of Natural Habitats due to anthropogenic activities.
- Food Dearth and Contaminated Food.
- Electrocution by Power lines.

➤ **Conservation Efforts:**

- Recently, the Ministry for Environment, Forests and Climate Change launched a **Vulture Action Plan 2020-25** for the conservation of vultures in the country.
 - It will ensure minimum use of Diclofenac and prevent the poisoning of the principal food of vultures, the cattle carcasses.
- To study the cause of deaths of vultures in India, a **Vulture Care Centre (VCC) was set up at Pinjore, Haryana in 2001.**
- Later in 2004, the VCC was upgraded to being the first Vulture Conservation and Breeding Centre (VCBC) in India.

- At present, there are nine Vulture Conservation and Breeding Centres (VCBC) in India, of which three are directly administered by the **Bombay Natural History Society (BNHS)**.

Namdapha National Park

Why in News?

The Changlang district administration has declared cultivation of large cardamom in the Namdapha National Park (NP) illegal.

What are the Key Points

About Namdapha National Park?

➤ **About:**

- Namdapha is in fact the name of a river originating in the park and it meets Noa-Dehing river.
 - The Noa-Dehing river, is a tributary of the Brahmaputra and flows in a North-South direction in the middle of the National Park.

➤ **Climate:**

- Enjoys the sub-tropical climate. The mountainous part has a mountain type of climate while the low-lying plains and valleys experience tropical climate.

➤ **Location:**

- It is located in the State of **Arunachal Pradesh** and it covers 1,985 sq km.
- It lies in close proximity to Indo-Myanmar-China trijunction.
- The park is located between the **Dapha bum range of the Mishmi Hills** and the **Patkai range**.
- It is the **fourth largest national park in India**.
 - The first three are **Hemis National Park** in Ladakh, **Desert National Park** in Rajasthan, and **Gangotri National Park** in Uttarakhand.

➤ **Legal Status:**

- It was established as a national park in 1983, and it was declared as a Tiger Reserve in the same year of 1983 in the same year.
- It is also on the **Tentative Lists of UNESCO World Heritage Sites** in India.

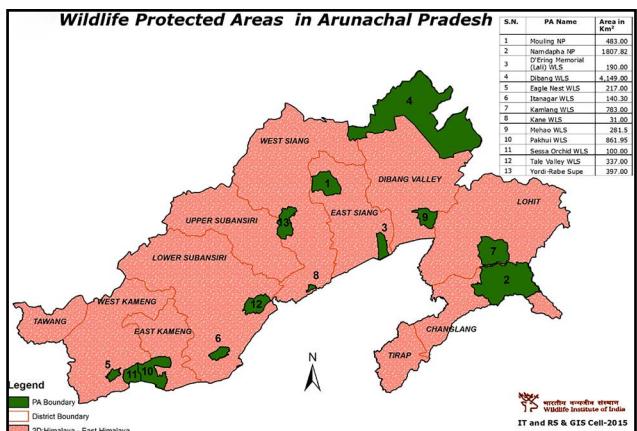
➤ **Biodiversity:**

Note:

- This protected area has more than 1000 floral species and more than 1400 faunal species.
- It is also a part of **biodiversity hotspot**.
- It is **only park in the World to have the four Feline species of big cat** namely the **Tiger (Panthera Tigris)**, **Leopard (Panthera Pardus)**, **Snow Leopard (Panthera Uncia)** and **Clouded Leopard (Neofelis Nebulosa)**.
- It is also famous for **Critically Endangered species** like the Namdapha flying squirrel, species that was last spotted in 1981.
- **Hoolock Gibbons**, the only 'ape' species found in India is found in this National Park.
- **Vegetation:** The vegetation is characteristic of **tropical evergreen forests (Tropical Rain Forests)**

What are the Other Protected Areas in Arunachal Pradesh?

- **Pakke Wildlife Sanctuary.**
- Mouling National Park
- Kamlang Wildlife Sanctuary.
- Itanagar Wildlife Sanctuary.
- Eagle Nest Wildlife Sanctuary.



World Sloth Bear Day

Why in News?

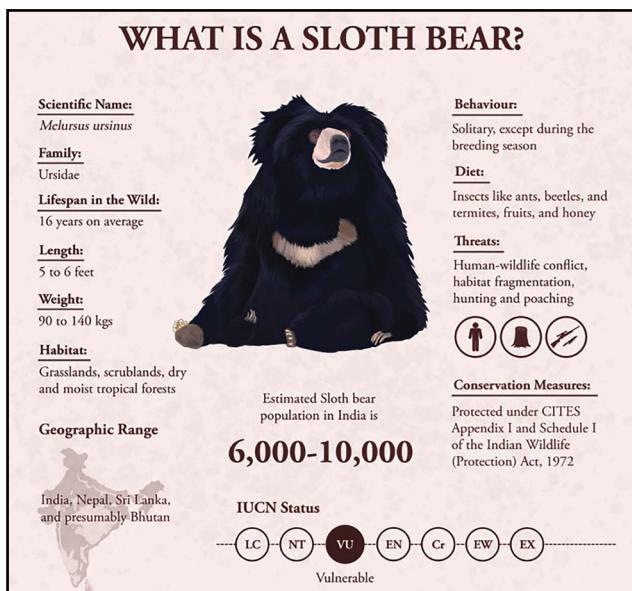
The first World Sloth Bear Day was observed on October 12, 2022 to generate awareness and strengthen conservation efforts around the unique bear species endemic to the Indian subcontinent.

- It was proposed by **Wildlife SOS India**, an organisation involved in sloth bear conservation and protection for over two decades and the **(International Union for Conservation of Nature) IUCN-Species Survival Commission (SSC) sloth bear expert team** accepted and declared the day to be celebrated worldwide.

What is Sloth Bear?

- **About:**
 - Sloth Bear is one of the 8 bear species found across the globe.
 - Sloth bears primarily **eat termites and ants**, and unlike other bear species, they routinely carry their cubs on their backs.
 - They are also very fond of honey, hence their alternative name of "**honey bear**".
 - Sloth bears **do not hibernate**.
 - They are agile and considered one of the most formidable wild animals.
 - They are also known as the **least researched bear species**.
- **Scientific Name:** *Melursus Ursinus*.
- **Habitat:** Presently Sloth bears are only found in the Indian subcontinent, Nepal and a sub-species in Sri Lanka.
 - About 90% of the global Sloth Bear population is found in India.
- **Conservation Status:**
 - **IUCN Red List:** Vulnerable.
 - **Wildlife protection Act (1972):** Schedule I.
 - **Convention on International Trade in Endangered Species (CITES):** Appendix I.
- **Threats:**
 - An ethnic group named **Kalandars**, who were mostly poor performed a practice known as a **dancing bear**, where the **captured sloth bears are tortured to make them dance**.
 - According to several reports, their population has dropped by 40 to 50% over the last three decades mainly due to **habitat loss, habitat fragmentation, poaching and increasing human-bean conflict**.

Note:



➤ Conservation efforts:

- The Wildlife SOS Bear rescue centres are rescuing Sloth bears and reintroducing them to their natural habitat where they also received veterinary care.
- Further, to ensure the Kalandar community did not fall back on poaching wild animals for a living, Wildlife SOS **worked with the Kalandars to provide them with alternative forms of livelihood** and access to education.
- Through the declaration of World Sloth Bear Day, Wildlife SOS and the IUCN-SSC, (**Species Survival Commission**) Sloth Bear Expert Team aim to set precedence for the rest of the world to promote the conservation of Sloth bears and their habitats throughout their distribution range.

World Migratory Bird Day, 2022

Why in News?

World Migratory Bird Day was recently celebrated on 08 October 2022.

What is World Migratory Bird Day (WMBD)?

- **About:** It is a **bi-annual global campaign** organised to raise awareness about migratory birds, the need for their conservation, and the importance of the preservation of their habitat.
- It is celebrated on the second Saturday in May and then in October. This year it was celebrated on 14 May and 8 October 2022.

Note:

- WMBD is organized by a collaborative partnership among two UN treaties - the **Convention on the Conservation of Migratory Species of Wild Animals (CMS)** and the African-Eurasian Migratory Waterbird Agreement (AEWA), and the non-profit organization, Environment for the Americas (EFTA).

- The 2022 global campaign is also being actively supported by other dedicated organizations, including the **East Asian Australasian Flyway Partnership (EAAFP)** and Bird Life International (BLI).

➤ Theme:

- The theme of World Migratory Bird Day 2022 is **"Light Pollution"**
- WMBD 2022 is addressing the growing issue of light pollution on these birds and actions on a global scale to help migrate these birds safely.
- **Artificial lights are the cause of significant threats to migratory birds such as:**
 - Distortion while flying at night
 - Collisions with buildings
 - Disruptions - in their ability to migrate long distances and in their internal clock.

What is Light Pollution?

➤ About:

- As per CMS, "**light pollution refers to artificial light that alters the natural patterns of light and dark in ecosystems**".
- The use of artificial light at night is increasing all over the world. **From 2012 to 2016, artificially lit outdoor areas increased by 2.2% per year**, in 2022, this number could be much greater.
- Today, **more than 80% of the world's population lives under a "lit sky"**, a figure closer to 99% in Europe and North America.

➤ Impact of Light Pollution on Birds:

- It can **alter birds' behaviours**, including migration, foraging and vocal communication.
- It also **affects their activity levels and their energy expenditure**, especially those which migrate at night.

- It attracts and **disorients nocturnally migrating birds**, which may end up circling in illuminated areas.
 - This unnatural light-induced behaviour can mean they end up **depleting their energy reserves** and puts them at risk of exhaustion, predation and lethal collision.
- **Long distance migratory birds**, such as the blackpoll warbler, the Asian stubtail and the oriental plover may start and end their migrations in areas with relatively low levels of light pollution, but **during migration they may fly over areas of intense urban development where they experience high levels of artificial light.**

What is the Convention on Migratory Species (CMS) or the Bonn Convention?

- It is an international agreement that aims to conserve migratory species throughout their ranges. The agreement was signed under the auspices of the **United Nations Environment Program (UNEP)** and is concerned with conservation of wildlife and habitats on a global scale.
 - It was signed in 1979 in Bonn, West Germany and entered into force in 1983.
- As an environmental treaty of the United Nations, CMS provides a global platform for the conservation and **sustainable use of migratory animals and their habitats.**
- India is a signatory to the CMS.
 - India hosted the CMS CoP-13 (in 2020) at Gandhi Nagar, Gujarat.
 - India has also launched the National Action Plan for the conservation of migratory species under the Central Asian Flyway.
 - India is a temporary home to several migratory animals and birds.
 - The important among these include **Amur Falcons, Bar-headed Geese, Black-necked cranes, Marine turtles, Dugongs, Humpback Whales**, etc.
 - The Indian sub-continent is also part of the major bird flyway network, i.e., the **Central Asian Flyway (CAF)** that covers areas between the Arctic and Indian Oceans.

Post-Facto Environmental Clearances

Why in News?

Recently, the Supreme Court has concluded that ex post facto (after being started) **Environmental Clearances (EC)** are acceptable.

- The court has concluded in response to a claim that a **bio-medical treatment facility** was set up and run without an EC and it raises concern over Environmental Degradation.

What is an Ex Post Facto Environment Clearance?

- Ex post facto environmental clearance refers to **allowing functioning of an industry or project which has started operating without obtaining the green clearance** and disclosing the probable environmental impacts of the project.
- A bench of SC observed that the **Environment (Protection) Act, 1986**, did not absolutely prohibit the grant of **ex post facto environmental clearance**.
 - It should not be granted routinely, **but in exceptional circumstances** taking into account all relevant environmental factors.

What are the Related Concerns?

- A post facto assessment **defeats the very purpose of Environment Impact Assessment (EIA)** because irreversible ecological damage **will already have been committed** with the commencement of operations.
 - The **Food and Agriculture Organisation (FAO)** of the United Nations **defines the purpose of EIA as alerting decision makers**, regulatory agencies and the public of environmental consequences of projects "so that those projects can be modified, if need be, to prevent environmental deterioration, to avoid construction errors and to forestall economic losses caused by negative side effects.
- The industries are encouraged to commence operations **without bothering for clearance and eventually get organized by paying the penalty amount**. It is likely to open a **floodgate of violations and give rise to a situation** where damage to the environment is irreversible.

Note:

What is the Environment Impact Assessment?

- It can be defined as the study for predicting the effect of a proposed activity/project on the environment.
- It is statutory under the **Environment Protection Act, 1986** for some projects.
- Process:
 - **Screening** based upon scales of investment, type of development, and location of the development is done to see whether a project requires an environmental clearance as per the statutory notifications.
 - **Scoping** is a process of detailing the Terms of Reference (ToR) of EIA, that is the main issues or problems in the development of a project.
 - **Impact Prediction** involves mapping the environmental consequences of the significant aspects of the project and its alternatives.
- The public mandatorily needs to be informed and consulted on the proposed development after the completion of the EIA report.

What is the Environment Clearance Process?

- An EIA report is prepared to get **Environment Clearance (EC)** for a project.
- A process of '**Public Hearing**' is conducted before the issue of 'Consent to Establish (NOC)' by state regulators. Concerns of people living in the proposed project area are heard.
- An application form with **EIA report, details of public hearing and NOC** is submitted for environmental clearance with the **Ministry of Environment and Forests and Climate Change (MoEFCC)** if the project falls under Project A category or the state government if the project falls under Project B category.
 - **Category A projects** require **mandatory environmental clearance** and thus they do not undergo the screening process.
 - **Category B projects** undergo a screening process and they are classified into two types.
 - **Category B1 projects** (Mandatorily requires EIA).
 - **Category B2 projects** (Do not require EIA).
- The documents submitted are then analyzed by an **Expert Appraisal Committee (EAC) under the Ministry**. The recommendations of the Committee get processed in the MoEFCC for final approval or rejection.

Note:

**Global Methane Pledge:
GMCCA Forum****Why in News?**

Global Methane, Climate and Clean Air (GMCCA) Forum 2022 is being held in Washington, DC, USA to discuss **opportunities to protect the climate** and improve air quality with a special focus on **methane** by adhering to the **Global Methane Pledge**.

What is the Agenda of the Forum?

- The Forum is a joint event sponsored by the **Global Methane Initiative (GMI)** and the **UNEP-convened Climate and Clean Air Coalition (CCAC)**.
 - GMI is an **international public-private partnership** focused on reducing barriers to the **recovery and use of methane** as a clean energy source. It provides **technical support to deploy methane-to-energy projects** around the world that enable Partner Countries to launch methane recovery and use projects.
 - India is a **partner country of GMI**.
- High-level plenary sessions will be held on **global efforts to reduce methane and other short-lived climate pollutants**.
- The forum will outline **policy, political and scientific arguments for global ambition on methane action**. They also aim to define a path forward.

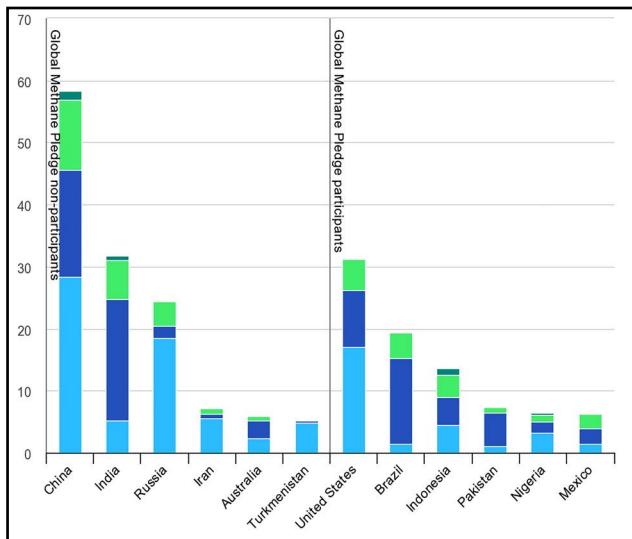
What is the Global Methane Pledge?

- **About:**
 - The Global Methane Pledge was launched at **COP (Conference of Parties) 26 in November 2021** to catalyse action to reduce methane emissions.
 - It was led by the **United States and the European Union**.
 - It has 111 country participants who together are **responsible for 45% of global human-caused methane emissions**.
 - India, which is not a part of the Global Methane Pledge, is **among the top five methane emitters globally**. Most emissions can be traced back to agriculture.
 - By joining the Pledge, **countries commit to work together in order to collectively reduce methane emissions** by at least 30% below 2020 levels by 2030.

➤ **Concern:**

- Methane has contributed to about **one-third of the current anthropogenic greenhouse gas-driven warming.**
- Methane enters the atmosphere due to **Leaks in oil and gas industries**, rearing livestock and the decomposition of waste in landfills.
- Currently, only 2 % of global climate finance goes to methane.
- If the Global Methane Pledge is not adhered to, Methane emissions will **likely increase by 13 % by 2030.**

➤ **Top twelve emitters of methane with breakdown by sector, 2021:**



What is Methane?

➤ **About:**

- Methane is a gas that is **found in small quantities in Earth's atmosphere.** Methane is the simplest hydrocarbon, consisting of one carbon atom and four hydrogen atoms (CH₄). Methane is **powerful greenhouse gas.** It is flammable, and is used as a fuel worldwide.
- Methane is produced by **the breakdown or decay of organic material and can be introduced into the atmosphere** by either natural processes – such as the decay of plant material in wetlands, the seepage of gas from underground deposits or the digestion of food by cattle – or **human activities – such as oil and gas production, rice farming or waste management.**

➤ **Impact:**

- Methane is **84 times more potent than carbon and doesn't last** as long in the atmosphere before it breaks down. This makes it a critical target for reducing global warming more quickly while simultaneously working to reduce other greenhouse gases.
- It is **responsible for creating ground-level ozone**, a dangerous air pollutant.

What are the Indian Initiatives to Combat Air Pollution?

- **Harit Dhara.**
- **India Greenhouse Gas Program.**
- **National Action Plan on Climate Change**
- **Bharat Stage-IV (BS-IV) to Bharat Stage-VI (BS-VI) emission norms.**

Corbett Tiger Reserve: Uttarakhand

Why in News?

Over 6,000 trees were illegally cut for the proposed Pakhro tiger safari project in **Corbett Tiger Reserve (CTR)**, according to a report of the **Forest Survey of India (FSI).**

- The FSI has come up with an observation that the area cleared under CTR is estimated as **16.21 hectare (hac)** for the Safari Project.
- **Pakhro tiger safari** will be spread over an area of 106 hectares, when completed, it would have **been the State's first tiger safari** that would have tigers in enclosures to ensure "100% sighting".

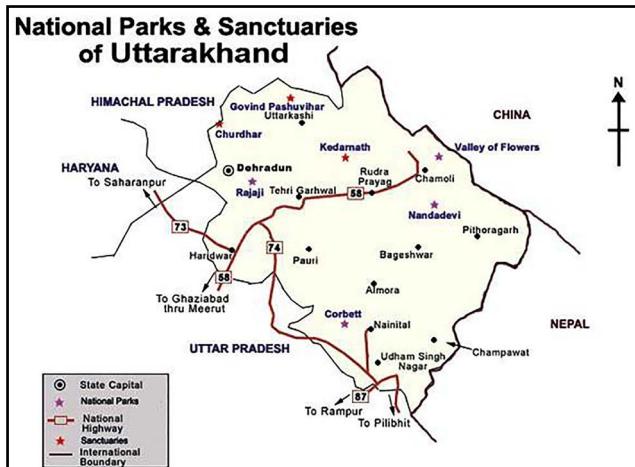
What are the Key Points of Corbett Tiger Reserve?

➤ **About:**

- It is located in the **Nainital district of Uttarakhand.** The **Project Tiger** was launched in 1973 in **Corbett National Park (first National Park of India)**, which is part of Corbett Tiger Reserve.
 - The national park was established in 1936 as Hailey National Park to protect the endangered Bengal tiger.
 - It is named after Jim Corbett who played a key role in its establishment.

Note:

- The core area forms the **Corbett National Park** while the buffer contains reserve forests as well as the Sonanadi Wildlife Sanctuary.
 - The entire area of the reserve is mountainous and falls in the Shivalik and Outer Himalaya geological provinces.
 - **Ramganga, Sonanadi, Mandal, Palain and Kosi** are the major rivers flowing through the Reserve.
 - Sprawling over **500 square kilometres**, CTR is home to 230 tigers and has the world's highest tiger density — at 14 tigers per hundred square kilometres.
- **Flora:**
- Dense moist deciduous forests are found. According to the **botanical survey of India**, Corbett has 600 species of plants – trees, shrubs, ferns, grass, climbers, herbs, and bamboo. Sal, Khair, and Sissoo are the most visible trees found in Corbett.
- **Fauna:**
- Apart from tigers, Corbett also has leopards. Other mammals such as jungle cats, barking deer, spotted deer, sambar deer, sloth etc. are also found there.
- **Other Major Protected Areas of Uttarakhand:**
- **Nanda Devi National Park.**
 - Valley of Flowers National Park.
 - Valley of Flowers National Park and Nanda Devi National Park together are a **UNESCO World Heritage Site**.
 - **Rajaji National Park.**
 - **Gangotri National Park.**
 - Govind National Park.



Note:

Holistic Water Management System

Why in News?

With the rapid growth of cities, water **demand has exponentially increased**. Even as aspirations cause people to migrate to urban areas, **water depletion and scarcity remains a huge challenge** staring at people's faces in the near future.

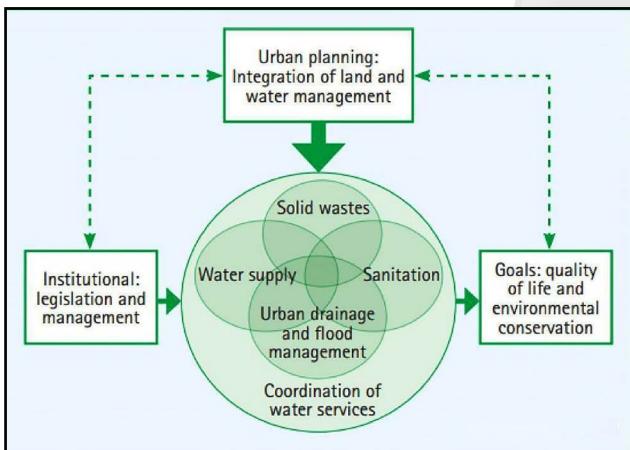
What is the Need for a Holistic Water Management System?

- Around 35 % of India's population lived in urban areas as of 2020, it is expected to double by 2050.
- In urban areas, only 45 % of the demand is met **using groundwater resources**. Apart from this, **climate change, pollution and contamination have also added to the burden** on water resources.
- As water demand exceeds supply in most cities, **water management needs to undergo a revolution** to ensure most urban areas can be self-sufficient in the future.
- In India, there are different water management systems based on **utilities like sanitation, urban water, stormwater and wastewater** that deal with water-related issues in different localities. Since areas and localities define distribution and water allocation, it is **often a challenge to find a unified solution**.
- Thus, water management needs to undergo a revolution and **Integrated Urban Water Management (IUWM) system for reliable supply** is ensured in most urban areas for self-sufficiency in the future.

What is an Integrated Urban Water Management System?

- **About:**
 - IUWM is a process, which ensures water supply, used water management, sanitation and stormwater management **can be planned in line with economic development and land use**.
 - This holistic process **makes coordination among water departments easier** at the local level.
 - It also helps **cities adapt to climate changes and manage water supply** more efficiently.
- **Approaches:**
 - **Collaborative Action:**

- Clear coordination amongst all the stakeholders, it is easily defined and prioritizes accountability.
- While effective legislation will help guide local authorities, **engaging local communities will lead to faster solutions** in water management.
- **Shift in Perception of Water:**
 - It is essential to understand **how water is inseparable in its connection** to economic development, city infrastructure and land use.
- **Understanding Water as a Resource:**
 - Water is a resource for various end goals thus it will be easier to treat different kinds of water based on agricultural, industrial and environmental purposes.
- **Customized Solutions for Different Cities:**
 - IUWM focuses on **specific contexts and local requirements** and prioritizes a **rights-based solution approach** over a one-size-fits-all approach.



What are the Challenges Regarding Water Management in India?

- **Potential Rural-Urban Conflict:**
 - Cities are rapidly expanding as a result of rapid **urbanisation**, and a large **influx of migrants** from rural areas has increased the per capita use of water in cities, which is causing water to be transferred from rural reservoirs to urban areas to meet the deficit.
- **Ineffective Wastewater Management:**
 - In a highly water-stressed environment, the **inefficient use of wastewater** is leaving India **unable to make the most economical use** of its resources. In cities, most of this water is in the form of **greywater**.

- According to a recent report published by the Central Pollution Control Board (March 2021), India's **current water treatment capacity** is 27.3% and the sewage treatment capacity is 18.6% (with another 5.2% capacity being added).

➤ **Food Security Risk:**

- Crops and livestock need water to grow. Water is used extensively for **irrigation in agriculture** and serves as a major source of domestic consumption. Given the combination of rapidly declining groundwater levels and inefficient river water management, **food insecurity** is likely to follow.
- The impacts of water and food scarcity can undermine basic livelihoods and exacerbate social tensions.

➤ **Rising Water Pollution:**

- There is a large amount of domestic, industrial, and mining waste that is discharged into water bodies, which can lead to waterborne illnesses. Moreover, water pollution can lead to **eutrophication**, which can significantly impact **aquatic ecosystems**.

➤ **Overexploitation of Groundwater:**

- **256 of 700 districts in India have reported critical or overexploited** groundwater levels according to the most recent study of the **Central Ground Water Board**.
- A NITI Aayog report says that India is suffering from the worst water crisis in its history, citing that, 21 cities- including Bangalore, Delhi, Hyderabad and Chennai- **probably exhausted their groundwater resources in 2021**.
- Wells, ponds and tanks are drying up as **groundwater resources** come under increasing pressure due to over-reliance and unsustainable consumption. This has escalated the water crisis.

What are the Related Initiatives?

- **Swachh Bharat Mission.**
- **Jal Jeevan Mission**
- **National Water Policy, 2012**
- **Pradhan Mantri Krishi Sinchayee Yojana**
- **Jal Shakti Abhiyan- Catch the Rain Campaign**
- **Atal Bhujal Yojana**
- **Sujalam 2.0**
- **Amrit Sarovar Mission**

Note:

India lags in Biomass Co-firing Targets

Why in News?

The Ministry of Power is considering cutting coal supply to plants, which do not comply with biomass cofiring Norms.

- The Power Ministry in October 2021 had decreed that all thermal power plants ensure 5% compliance by October 2022.
- In 2020-21, only eight power plants **had co-fired biomass pellets**, and this number had risen to 39 recently.

What is Biomass Co-firing?

➤ About:

- Biomass co-firing is the practice of substituting a part of the fuel with biomass at **coal thermal plants**.
 - Coal and biomass are combusted together in boilers that have been designed to burn coal. For this purpose, the existing coal power plant has to be partly reconstructed and retrofitted.
 - Co-firing is an option to convert biomass to electricity, in an efficient and clean way, and to reduce **GHG (Green house Gases) emissions** of the power plant.
- Biomass co-firing is a globally accepted cost-effective method for **decarbonising** a coal fleets.
- India is a country where biomass is usually burnt on the field which reflects apathy towards resolving the problem of clean coal using a very simple solution that is readily available.

➤ Significance:

- Biomass co-firing is an effective way to curb emissions from open burning of crop residue, it also organizes the process of electricity generation using coal.
 - Substituting 5-7 % of coal with biomass in coal-based power plants can save 38 million tonnes of carbon dioxide emissions.
- It can help cut emissions from combustion of fossil fuels, **address** India's burgeoning problem of **farm stubble burning** to some extent, reduce waste burden while also creating jobs in rural areas.

- India has large biomass availability as well as rapid growth in coal-fired capacity.

➤ Challenges:

- The existing infrastructure is not robust enough to substitute **5-7% of coal with biomass in coal-based power plants**, which indeed can save 38 million Tonnes of carbon dioxide emissions.
- **Around 95,000-96,000 tonnes** of biomass pellets are required per day for co-firing, but India's pellet manufacturing capacity is 7,000 tonnes per day at present despite a surplus 228 million tonnes of agricultural residue available in the country.
 - This huge gap is due to the seasonal availability and unreliable supply of biomass pellets to the utility.
- It is challenging to store biomass pellets for long durations at the plant sites since they absorb moisture from air quickly, rendering them useless for co-firing.
- Only pellets with **up to 14% of moisture** can be used for combustion along with coal.

What is Biomass?

➤ About:

- Biomass is plant or animal material used as fuel to produce electricity or heat. Examples are wood, energy crops and waste from forests, yards, or farms.
- Biomass has always been an important energy source for the country considering the benefits it offers.

➤ Benefits:

- It is renewable, widely available, carbon-neutral and has the potential to provide significant employment in the rural areas.
- It is also capable of providing firm energy. About 32% of the total primary energy use in the country is still derived from biomass and more than 70% of the country's population depends upon it for its energy needs.

➤ Biomass Power & Cogeneration Programme:

○ About:

- Initiated by the Ministry of New and Renewable Energy.

Note:

- For efficient utilization of biomass, bagasse-based cogeneration in sugar mills and biomass power generation have been taken up under the programme.
- Biomass materials used for power generation include Rice husk, straw, cotton stalk, coconut shells, soya husk, de-oiled cakes, coffee waste, jute wastes, groundnut shells, saw dust etc.
- **Objective:**
 - Promoting technologies for optimum use of the country's biomass resources for grid power generation.

What are the other Related Initiatives?

- **National Mission on use of Biomass in Coal Based Thermal Power Plants**
- **Carbon Capture and Storage**
- **Coal Beneficiation**

A Climate Risk Index for Marine Life

Why in News?

Recently, a new study was published titled **Climate Risk Index for Marine Life**, which captures the climate risk for nearly 25,000 marine species and their ecosystems.

- This new index lays the **groundwork for supporting climate-smart approaches** to managing and conserving **marine life**.

What are the Findings?

- **Altering Marine Ecosystems:**
 - Warming oceans and climate extremes are **driving species into deeper, more northern and cooler locations, altering their behaviour** and reconfiguring marine ecosystems in radical and unprecedented ways.
- **High Emissions Scenario:**
 - In the high emissions scenario, the global average ocean temperature will increase by 3-5 degrees Celsius by 2100. Under this scenario, **almost 90 % of the 25,000 species are at a "high" or "critical" climate risk**. The average species is at risk across 85 % of its geographic range.

➤ Subtropical and Tropical Ecosystem:

- The risk is **highest in the subtropical and tropical ecosystems** that tend to be biodiversity hotspots and in **nearshore ecosystems that support 96 % of the global fish catch**.
- Top predators like **sharks and tunas are at significantly higher risk than species further down the food chain**, like forage fishes. Such predators can have massive effects on ecosystem structure and functioning.

➤ Low-Income Nations:

- Under high emissions, climate risks for fished species such as cod and lobsters are consistently greater within the territories of **low-income nations, where people depend more on fisheries to meet their nutritional needs**.
- This represents **yet another example of climate inequality** wherein low-income countries that have contributed the least to climate change, and are more aggressively reducing their emissions, **are experiencing its worst impacts while having the lowest capacity to adapt to them**.

➤ Low Emissions Scenario:

- Under a low emissions scenario, **average ocean temperatures are expected to increase by 1-2 degrees Celsius** by 2100, as per the two degrees Celsius **global warming limit** in the **Paris Agreement**.
- Under this future, there is a reduced climate risk for virtually all marine life (98.2 %). The disproportionate risk for ecosystem structure, biodiversity, fisheries and low-income nations **are greatly reduced or eliminated**.

What are the Suggestions?

- Choosing a more sustainable path that prioritizes climate mitigation **will lead to clear benefits for ocean life and people**.
- Cutting emissions is the **most direct approach to reducing climate risks**.
- In addition to reducing emissions, it is imperative to simultaneously find ways **to adapt to a warming climate to protect our oceans**.
- There is a need to **incorporate new methods and adaptation strategies**, develop capacity in under-resourced parts of the world and carefully weigh the pros and cons of adaptation measures.

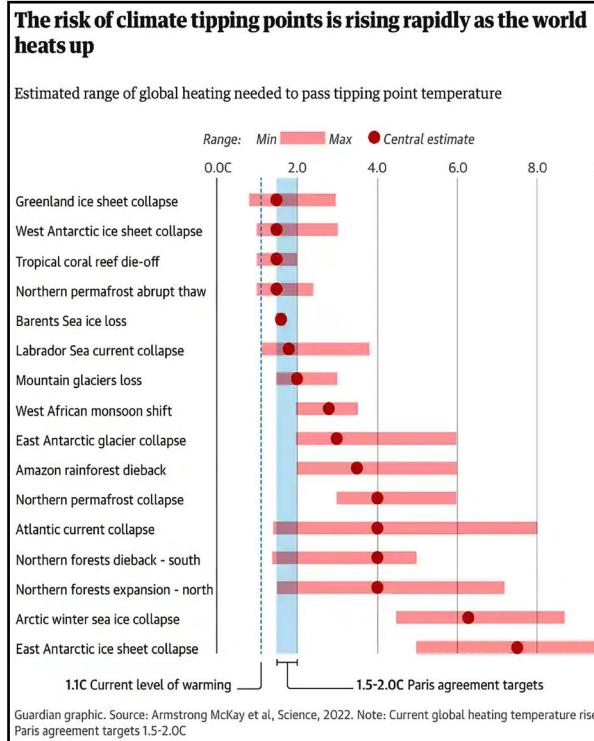
Note:

Climate Tipping Points

Why in News?

According to a major study, the climate crisis has driven the world to the brink of multiple “disastrous” tipping points.

- Climate Tipping Points or CTPs are **markers of a larger climate system** which when triggered beyond a threshold, perpetuates warming on its own.



What are the New Findings of the Study?

- According to the Study, five dangerous tipping points may already have been passed due to the 1.1°C of global heating caused by humanity to date.
 - These include the collapse of **Greenland's ice cap**, eventually producing a huge **sea level rise**, the collapse of a key current in the north Atlantic, disrupting rain upon which billions of people depend for food, and an abrupt melting of carbon-rich **permafrost**.
- At 1.5°C , **five tipping points become possible**, including changes to vast northern forests and the loss of almost all mountain glaciers, the die-off of tropical **coral reefs** and changes to the west African monsoon.

Note:

- In total, the researchers found evidence for 16 tipping points, with the final six requiring global heating of at least 2°C to be triggered.
 - The tipping points would take effect on timescales varying from a few years to centuries.
- At more than 2°C , the **nine global tipping points identified** are the collapse of Greenland, West Antarctic, and two parts of the east Antarctic ice sheets, the partial and total collapse of **Atlantic Meridional Overturning Circulation (AMOC)**, Amazon dieback, permafrost collapse and winter sea ice loss in the Arctic.
- Other potential tipping points still being studied include the loss of ocean oxygen and major shifts in the Indian summer monsoon.

Galápagos Islands

Why in News?

According to a recent study, **Cold ocean currents** have sheltered the Galápagos Islands from global warming.

- The islands are protected from an otherwise warming the Pacific Ocean by a cold, eastward equatorial ocean current.
 - The equatorial undercurrent in the Pacific Ocean is bound to the equator by the force of the planet's rotation. Under the ocean's surface, a swift circulation of cold, nutrient-rich water flows from west to east.

What is Galapagos Archipelago?

➤ Location:



- The Galapagos Islands, spread over almost 60,000 sq km, are a part of Ecuador.
- These are located in the **Pacific Ocean** around 1,000 km away from the South American continent.

➤ Protection Status:

- Ecuador made a part of the **Galapagos a wildlife sanctuary** in 1935, and the sanctuary became the **Galapagos National Park** in 1959.
- In 1978, the islands became **UNESCO's first World Heritage Site**.

➤ **Wildlife:**

- It contains aquatic species such as **manta rays and sharks** which have been endangered by commercial fishing.
- It also hosts a wide array of aquatic wildlife, including marine iguanas, and waved albatrosses.
 - Galápagos is home to the critically endangered — Galápagos penguin, Galápagos fur seal and Galápagos sea lion.
- Also, the giant tortoises found here — 'Galápagos' in old Spanish — give the islands its name.

➤ **Significance:**

- The British naturalist Charles Darwin made key observations in 1835 that shaped his theory of evolution.
- Darwin described the islands as a "**world in itself**".
- Corals do not bleach and die in these waters off the west coast of Ecuador.

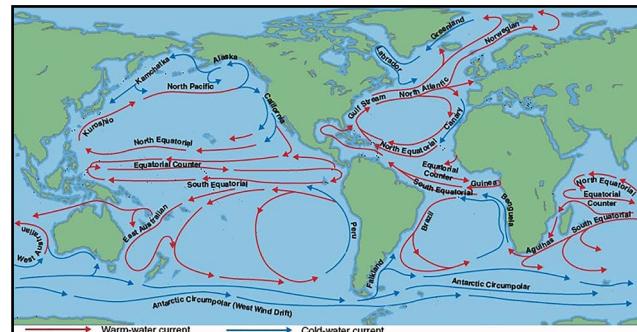
What are Ocean Currents?

➤ **About:**

- Ocean currents are the **continuous, predictable, directional movement of seawater**. It is a massive movement of ocean water that is caused and influenced by various forces. They are like river flows in oceans.

➤ **Types:**

- **Cold currents:** It brings cold water into warm water areas. These currents are usually found on the west coast of the continents in the low and middle latitudes (true in both hemispheres) and on the east coast in the higher latitudes in the Northern Hemisphere.
 - Examples: Canary Current, California Current, Benguela Current etc.
- **Warm currents:** It brings warm water into cold water areas and is usually observed on the east coast of continents in the low and middle latitudes (true in both hemispheres).
 - Examples: North Atlantic, Gulf Stream, the Kuroshio Current etc.



Which are the Factors that Influences Ocean Current?

➤ **Ocean Currents are Influenced by Two types of Forces:**

- **Primary Forces:**
 - **Heating by solar energy:** Heating by solar energy causes the water to expand. That is why, near the equator the ocean water is about 8 cm higher in level than in the middle latitudes. This causes a very slight gradient and water tends to flow down the slope.
 - **Wind:** Wind blowing on the surface of the ocean pushes the water to move. Friction between the wind and the water surface affects the movement of the water body in its course.
 - **Gravity:** Gravity tends to pull the water down the pile and create gradient variation.
 - **Coriolis Force.** The Coriolis force intervenes and causes the water to move to the right in the northern hemisphere and to the left in the southern hemisphere.
 - These large accumulations of water and the flow around them are called Gyres.
 - These produce large circular currents in all the ocean basins.
- **Secondary Forces:**
 - **Differences in Water Density:** Water with high salinity is denser than water with low salinity and in the same way cold water is denser than warm water.
 - Denser water tends to sink, while relatively lighter water tends to rise.
 - **Temperature of Water:** Cold-water Ocean currents occur when the cold water at the poles sinks and slowly moves towards the equator.
- Warm-water currents travel out from the equator along the surface, flowing towards the poles to replace the sinking cold water.

Note:

History

Highlights

- Mohandas Karamchand Gandhi
- Birth Anniversaries of Jayaprakash Narayan and Nanaji Deshmukh

- Lal Bahadur Shastri

Mohandas Karamchand Gandhi

Mohandas Karamchand Gandhi

"The weak can never forgive. Forgiveness is the attribute of the strong."

Brief Description

Birth: 2nd October 1869, Porbandar (Gujarat).
2nd October is observed as **International Day of Non-Violence**.
Profile: Lawyer, Politician, Social activist, Writer and led Nationalist Movement.
Father of the Nation (first called by Netaji Subhash Chandra Bose).
Ideology: Believed in the ideas of non-violence, Truth, Honesty, Care for Mother Nature, Compassion, Welfare of Downtrodden etc.
Political Mentor: Gopal Krishna Gokhale
Death: Shot dead by Nathuram Godse (30th January, 1948).
30th January is observed as **Martyrs' Day**
Nominated for the Nobel Peace Prize five times.



Gandhi in South Africa (1893-1915)

Used satyagraha against racist regime (Native Africans and Indians were discriminated).

Pravasi Bharatiya Divas (PBD) is celebrated every year on 9th January, to commemorate his return from South Africa.

Contribution in India's Freedom Struggle

Small-scale movements like Champaran Satyagraha (1917) – First Civil Disobedience, Ahmedabad Mill Strike (1918) – First Hunger Strike, and Kheda Satyagraha (1918) – First Non-Cooperation.

Nationwide Mass Movements: Against Rowlatt Act (1919), Non-Cooperation Movement (1920-22), Civil Disobedience Movement (1930-34), Quit India Movement (1942).

Gandhi-Irwin Pact (1931): Between Gandhi and Lord Irwin that marked the end of a period of civil disobedience.

Poona Pact (1932): Between Gandhi and B.R. Ambedkar; this abandoned the idea of separate electorates for the depressed classes (Communal Award).



Books Written

Hind Swaraj, My Experiments with Truth (Autobiography)

Weeklies

Harjan, Navjivan, Young India, Indian Opinion.

Gandhi Peace Prize

is given by India for social, economic, and political transformation through Gandhian methods.

"Happiness is when what you think, what you say, and what you do are in harmony."

"You must not lose faith in humanity. Humanity is an ocean; if a few drops of the ocean are dirty, the ocean does not become dirty."

Birth Anniversaries of Jayaprakash Narayan and Nanaji Deshmukh

Why in News?

The Prime Minister of India has paid tributes to Loknayak Jayaprakash Narayan and Nanaji Deshmukh on their birth anniversary.

Note:

Who was Jayaprakash Narayan?

About:

- **Birth:** 11th October, 1902 in Sitabdiara, Bihar.
- **Influenced By:** Marxist ideas in the USA and **Gandhian ideology**.
- **Contribution to Freedom Struggle:**

- In 1929, he joined the Indian National Congress.
 - In 1932, he was imprisoned for a year for participation in the civil disobedience movement.
 - In 1939, he was imprisoned again for his **opposition to Indian participation in World War II** on the side of Britain but escaped.

- He played a **key role in the formation of the Congress Socialist Party (1934)**, a **left-wing group** within the Congress Party.



Post-Independence Role:

- In 1948, he **left the Congress Party** and initiated an **anti-Congress Campaign**.
 - In 1952, he **formed the Praja Socialist Party (PSP)**.
- In 1954, he devoted his life exclusively to the **Bhoodan Yajna Movement, of Vinoba Bhave**, which demanded **land redistribution to the landless**.
- In 1959, he argued for a "**reconstruction of Indian polity**" by means of a **four-tier hierarchy of village, district, state, and union councils (Chaukhamba Raj)**.
- **Total Revolution:** He led the movement against Indira Gandhi Regime as she was found guilty of violating electoral laws by the Allahabad High Court.

- He advocated a program of social transformation which he termed '**'Sampoorna Kranti'** (total revolution) in 1974 against corruption in public life.
 - Total Revolution has **seven component revolutions**, namely- political, social, economic, cultural, ideological or intellectual, educational and spiritual.
 - The objective was to bring in a change in the existing society that is in **tune with the ideals of the Sarvodaya** (Gandhian philosophy- progress for all).
- **Awarded Bharat Ratna:** Jayaprakash Narayan was **posthumously conferred** with India's highest civilian award, the **Bharat Ratna (1999)**, for his "invaluable contribution to the freedom struggle and upliftment of the poor and downtrodden".

Who was Nanaji Deshmukh?

- **About:**
- **Birth:** 11th October 1916 in Maharashtra's Hingoli district.
 - **Influenced By:** **Lokamanya Tilak** and his nationalist ideology and Dr. Keshav Baliram Hedgewar, founding Sarsangha-chalak(head) of the Rashtriya Swayamsevak Sangh (RSS).

- **Participation in Movements:** He actively participated in Acharya Vinoba Bhave's **Bhoodan Movement**.
 - Deshmukh was the **main force behind Jayaprakash Narayan's agitation for total revolution**.



- **Social Activism:** He was a social reformer with focus on health, education and **rural self-reliance**.

- He established **Chitarkoot Gramoday Vishwavidyalaya** in Chitrakoot – India's first rural University and served as its Chancellor.

- He did great work towards the **anti-poverty** and minimum needs programme.

- **Electoral Politics:** He was one of the **main architects of the Janata Party**.

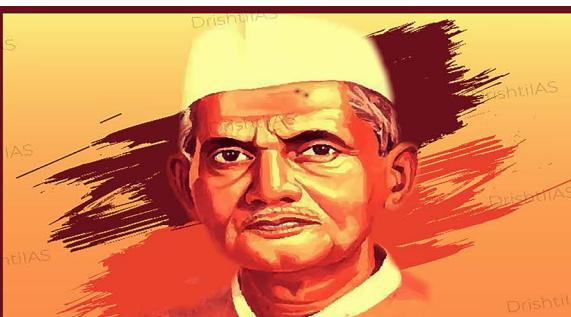
- He won in the 1977 Lok election from Balrampur (UP) Lok Sabha constituency.

- He was nominated to Rajya Sabha in 1999 in recognition of his services to the nation.

- **Death:** 27th February, 2010.

- **Awards:** He was **awarded Padma Vibhushan** in 1999. In 2019, the President of India, conferred the **Bharat Ratna upon him (posthumously)** for his services to the nation.

Lal Bahadur Shastri



Lal Bahadur Shastri

The Man of Peace

Brief Description

- ▲ Birth: 2nd October 1904, Mughalsarai (Uttar Pradesh)
- ▲ Kashi Vidyapeeth: Degree in Philosophy and Ethics
- ▲ Famous Slogan: 'Jai Jawan Jai Kisan'
- ▲ Bharat Ratna (1966): Awarded Posthumously
- ▲ Lifetime Member: Lok Seva Mandal (founded by Lala Lajpat Rai)

Political Journey

- ▲ 1928: Joined Indian National Congress
- ▲ 1930: Joined Freedom Movement

Post-independence Journey

- ▲ 1935: General Secretary of UP Pradeshkongress Committee (PCC)
- ▲ 1940: Participated in **Individual satyagraha** and sent to prison
- ▲ 1942: Released from jail; Participated in the Quit India Movement

Prime Minister of India (1964–66)

- ▲ 1964: Second Prime Minister of the Republic of India
- ▲ 1964: Took initiative of White Revolution
- ▲ 1965: Established National Dairy Development Board (NDDB)
- ▲ 1965: Took initiative for Green Revolution

Wars During His Tenure

- ▲ 1962: War with China
- ▲ 1965: War with Pakistan

Death

- ▲ 11th January 1966: Died in Tashkent, Uzbekistan
- ▲ Just one day after signing the peace treaty to end the 1965 war with Pakistan
- ▲ 1978: A Book 'Lalita ke Aansoo' was published by M.L. Verma
- ▲ Tragic story of his death is narrated by his wife Lalita Devi
- ▲ 1977: Raj Narain committee: To look into the mysterious death of Shastri ji
- ▲ Vijay Ghat: Shastri ji's resting place (Delhi)
- ▲ IAS training institute, Mussoorie: Named as Lal Bahadur Shastri National Academy of Administration (LBSNAA)

"Discipline and united action are the real source of strength for the nation."

Note:

Geography

Highlights

- Mediterranean Sea
- Caspian Sea
- Strait of Malacca
- Persian Gulf
- Aral Sea
- Adriatic Sea
- Maheshwar Dam: Narmada River

Mediterranean Sea



Key Points

➤ Physical Geography:

- A sea of the Atlantic Ocean, lies between the continents of Eurasia and Africa enclosed almost completely by land.
- **Bordering Countries** (21 countries): Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Slovenia, Spain, Syria, Tunisia, and Turkey.
- To the west it is connected to the Atlantic Ocean through the Strait of Gibraltar, to the east with the Black Sea through the Dardanelles Straits, and to the south with the Red Sea through Suez Canal.
- Nile river (Africa) drains into the Mediterranean Sea.

➤ Recent Related Events:

- Western Disturbances
- Bomb Cyclone

- Maiden Navy Exercise: India-Algeria
- Grand Ethiopian Renaissance Dam's (GERD) on Nile

Caspian Sea



Key Points

➤ Physical Geography:

- Earth's largest inland body of water, when measured by surface area.
- **Bordered by** Russia (northwest), Azerbaijan (west), Iran (south), Turkmenistan (southeast) and Kazakhstan (northeast).
 - In 2003, the Caspian littoral states signed the (Tehran) Framework Convention for the Protection of the Marine Environment of the Caspian Sea.
- Lies at the junction of Europe and Asia, with the Caucasus Mountains to the west and the steppes of Central Asia to the east.

➤ Recent Related Events:

Note:

- **Western Disturbances**
- **International North South Transport Corridor (INSTC)**

Strait of Malacca



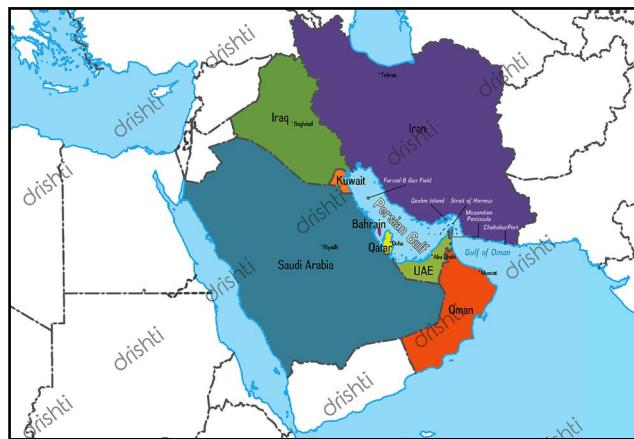
Key Points

- **Physical Geography:**
 - Connects the **Andaman Sea (Indian Ocean)** and the **South China Sea (Pacific Ocean)**.
 - Runs between the Indonesian island of Sumatra to the west and peninsular (West) Malaysia and extreme southern Thailand to the east.
- **Strategic Importance:**
 - **Shortest sea route between the Middle East and East Asia**, helping to reduce the time and cost of transportation among Asia, the Middle East and Europe.
 - Through this corridor, approximately 60% of the world's maritime trade transits, and is the **main source of oil supply for two of the main Asian consumers: the People's Republic of China and Japan**.
 - The **Andaman and Nicobar Command (ANC)** was created in 2001 to safeguard India's strategic interests in Southeast Asia and the Strait of Malacca by increasing rapid deployment of military assets in the islands.

Persian Gulf

Key Points

- **Physical Geography:**
 - An arm of the Arabian Sea; between the southwestern Iran and the Arabian Peninsula.



- **Bordering Countries:** Iraq, Kuwait, Saudi Arabia, Bahrain, Qatar, United Arab Emirates, Oman (Musandam exclave) and Iran.
- Connected to the **Gulf of Oman** in the east by the **Strait of Hormuz**.

- The Strait of Hormuz is situated between Qeshm Island and the Iranian coast in the north and the Musandam Peninsula of the Arabian Peninsula in the south.

➤ Strategic Importance:

- Persian Gulf countries are major producers of crude oil and natural gas.
- Iran, Iraq, Kuwait, United Arab Emirates (UAE) and Saudi Arabia are members of **OPEC (Organization of the Petroleum Exporting Countries)**.
- United Arab Emirates (UAE), Bahrain, Saudi Arabia, Oman, Qatar, Kuwait are members of the **Gulf Cooperation Council (GCC)**.

➤ Recent Related Events:

- **Chabahar Port**
- **Farzad-B Gas Field**

Aral Sea



Note:

Key Points

- Physical Geography:
 - A once-large saltwater lake of Central Asia.
 - **Bordering Countries:** Kazakhstan (north) and Uzbekistan (south).

Adriatic Sea



Key Points

- Physical Geography:
 - Arm of the Mediterranean Sea, lying between Italy and the Balkan Peninsula.
 - It extends **from the Gulf of Venice south to the Strait of Otranto**, linking it to the **Ionian Sea**.
 - **Bordering Countries:** Italy, Croatia, Bosnia and Herzegovina, Montenegro, Albania and Slovenia

Maheshwar Dam: Narmada River

Why in News?

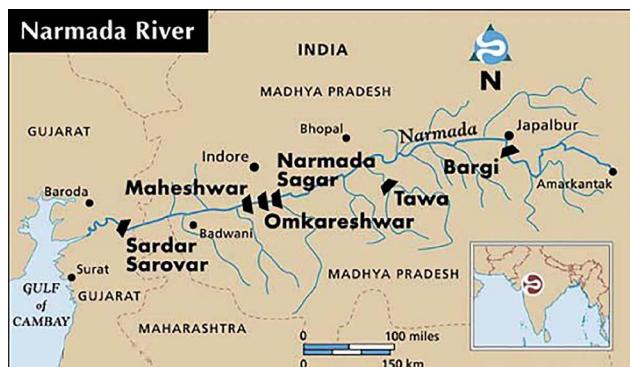
The Madhya Pradesh government has canceled all contracts with **Maheshwar Hydroelectric Project** almost three decades after it agreed to purchase power from it.

- It has been canceled due to its poor financial track record, several irregularities and graft allegations and **caused the submergence of 61 villages**.
- The Maheshwar dam is **one of the large dams of the Narmada Valley Development Project**, which envisages

the construction of **30 large and 135 smaller dams** in the Narmada valley.

What are the Key Points of Narmada River?

- About:
 - Narmada is the **largest west flowing river of the peninsular region** flowing through a rift valley between the Vindhya Range on the north and the Satpura Range on the south.
 - Narmada is flowing through the area where the land is not sloping **towards the west** from central India, but it is flowing west **because of the rift valleys only**.
 - It rises from **Maikala range near Amarkantak** in Madhya Pradesh.
 - It drains a large area in **Madhya Pradesh** besides some areas in the states of **Maharashtra and Gujarat**.
 - The river near Jabalpur (Madhya Pradesh) forms the DhuanDhar Falls.
 - There are **several islands in the estuary of Narmada** of which Aliabet is the largest.
- Major Tributaries: Hiran, Orsang, the Barna and the Kolar.
- Hydro Power Projects: Indira Sagar, Sardar Sarovar, Maheshwar etc.
- Narmada Bachao Andolan (NBA):
 - It is an Indian social movement spearheaded by native tribes (adivasis), farmers, environmentalists and human rights activists against a number of large dam projects across the **Narmada River**.
 - **Sardar Sarovar Dam** in Gujarat is one of the biggest dams on the river and was one of the first focal points of the movement.



Note:



Art and Culture

Highlights

- Odissi
- Sattriya
- Shri Mahakal Lok Corridor

Odissi



Drishti IAS

Odissi
(Odisha)

“

- Based on: **Natya Shastra** and **Abhinaya Darpana**.
- Representation: **Graceful, Sensual and Beautiful**.
- Also Known as '**mobile sculpture**'.
- Examples of earliest Odissi dance: **Caves of Udayagiri-Khandagiri**
- Primarily practiced by: **Maharis**.
- Patronized by: **Jain king Kheravela**.
- Odissi dance is accompanied by **Hindustani classical music**.

“

“

- Variant of Odissi.
- Practiced at the royal courts.
- **Major subjects of performance**
- Incarnations of **Lord Vishnu**
- Verses of **Jayadeva's Gita Govinda**
- **Two major postures**
- **Tribhangha**: The body is deflected at the neck, torso and the knees.
- **Chowk**: A position imitating a square.

“

Elements

- **Mangalacharan**
Beginning of dance.
Flower is offered to mother earth.
- **Batu Nritya**
It has the Tribhangha and the Chowk postures.
- **Pallavi**
Prominent facial expressions.
Representation of dance and song.
- **Tharijham**
Pure dance before conclusion.

“

“

- **Moksha**: Joyous movements signifying liberation.
- **Trikhanda majura**: Performer takes leave from the gods, audience and stage.

Costumes

- Elaborate hairstyle
- Silver Jewelry
- Long necklace.

“

Famous Proponents

- Guru Pankaj Charan Das
- Guru Kelu Charan Mohapatra
- Sonal Mansingh
- Sharon Lowen (US)
- Myrla Barvie (Argentina).

“



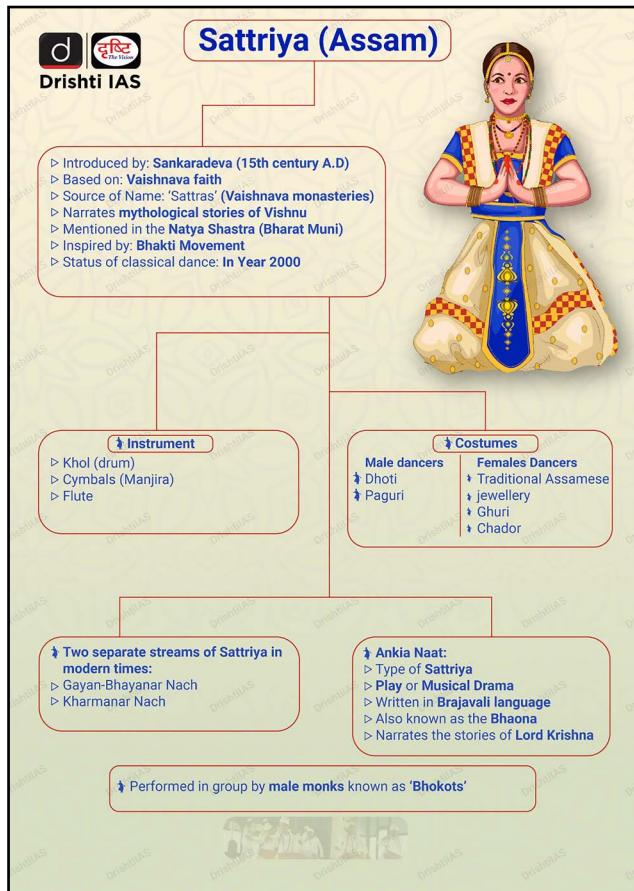
Instruments

- Drum**
- Pakhawaj**
- Flute**
- Sitar**
- Manjira (Cymbals)**

“

Note:

Sattriya



Shri Mahakal Lok Corridor

Why in News?

Recently, the Prime Minister inaugurated the first phase of the 'Shri Mahakal Lok' corridor in Ujjain, Madhya Pradesh.

- After Vishwanath temple in Varanasi and the Kedarnath shrine in Uttarakhand, Mahakal temple is the third 'jyotirlinga' site to see a major upliftment exercise.
- The Rs 800-crore Mahakal corridor is four times the size of the Kashi Vishwanath Corridor.

What is the Shri Mahakal Lok Corridor?

- About:**
 - Mahakal Maharaj Mandir Parisar Vistar Yojna is a plan for the expansion, beautification, and

decongestion of the Mahakaleshwar temple and its adjoining area in Ujjain district.

- Under the plan, the Mahakaleshwar temple premises of around **2.82 hectares** is being increased to **47 hectares**, which will be developed in two phases by the Ujjain district administration.

- This will include the **17 hectares of Rudrasagar lake**.

- The project is expected to increase annual footfall in the city from the current 1.50 crore to nearly three crores.

➤ First Phase:

- One of the aspects of the Vistar Yojna's first phase is a **visitor plaza with two entrances** or Dwaars i.e., the **Nandi Dhaar** and the **Pinaki Dhaar**.
 - The visitor plaza can **hold up to 20,000 pilgrims at a time**.

- A **circulation plan to reduce congestion** has also been developed, keeping in mind the entry of visitors into the city and their movement up to the temple.

- A **900-metre pedestrian corridor** has been constructed, **connecting the plaza to the Mahakal temple**, dotted with **108 murals** and **93 statues** depicting stories related to Lord Shiva, such as Shiv Vivah, Tripurasur Vad, Shiv Puran, and Shiv Tandav Swaroop.

- There are also **128 convenience points, eateries and shopping joints, florists, handicraft stores, etc.** along this pedestrian corridor.

➤ Second Phase:

- This includes **expansion of the eastern and northern fronts** of the temple.

- It also includes development of various areas of Ujjain city, such as **Maharajwada, Mahal Gate, Hari Phatak Bridge, Ramghat façade, and Begam Bagh Road**.

- Buildings in Maharajwada will be redeveloped** and connected to the Mahakal temple campus, while a **heritage dharamshala and Kumbh museum** will be built.

- The second phase is being developed with funding from **Agence Francaise de Development (AFD)** under the **City Investments to Innovate, Integrate and Sustain (CITIIS)** programme.

Note:

What is the Significance of Shri Mahakal Lok Corridor?

- **Immense Cultural Beliefs:** The temple is believed to be governed by **Mahakaleshwar**, which means the '**Lord of time**' i.e., **Lord Shiva**. As per Hindu mythology, the temple was **constructed by Lord Brahma** and is presently located alongside the **holy river Kshipra**.
- **Only Jyotirlinga Facing South:** Mahakaleshwar Jyotirlinga in Ujjain is **one of the 12 jyotirlingas** considered the most sacred abodes of Shiva. The shrine is revered as **one the 18 Maha Shaktia Peeth** in India.
 - It is the **only jyotirlinga facing the south**, while all the others face east. This is because the direction of death is believed to be the south.
 - In fact, people worship Mahakaleshwar to **prevent an untimely death**.
 - According to the Puranas, **Lord Shiva pierced the world as an endless pillar of light, called the jyotirlinga**.
 - Besides Mahakal, these include **Somnath** and **Nageshwar** in Gujarat, **Mallikarjuna** in Andhra Pradesh, **Omkareshwar** in Madhya Pradesh, **Kedarnath** in Uttarakhand, **Bhimashankar**, **Triyambakeshwar** and **Grishneshwar** in Maharashtra, **Viswanath** at Varanasi, **Baidyanath** in Jharkhand, and **Rameswaram** in Tamil Nadu.
- **Mention in Ancient Texts:** The Mahakal temple finds a **mention in several ancient Indian poetic texts**. In the early part of the Meghadutam (Purva Megha) composed in the **4th century**, **Kalidasa** gives a description of the Mahakal temple.

- It is described as one with a **stone foundation, with the ceiling on wooden pillars**. There would be **no shikharas or spires on the temples prior to the Gupta period**.
- **Destruction and Rebuilt of Temple:** During the medieval period, Islamic rulers used to give donations to priests for offering prayers here.
 - In the **13th century**, the temple complex was **destroyed by Turk ruler Shams-ud-din Iltutmish** during his raid on Ujjain.
 - The **present-day five-storeyed structure** was built by the Maratha general **Ranoji Shinde** in **1734**, in the **Bhumija, Chalukya and Maratha styles of temple architecture**.

What is the Historical Significance of the City of Ujjain?

- The city of Ujjain was one of the **primary centres of learning for Hindu scriptures**, called **Avantika** in the **6th and 7th centuries BC**.
- Later, astronomers and mathematicians such as **Brahmagupta** and **Bhaskaracharya** made Ujjain their home.
 - In the **18th century**, an **observatory was built here by Maharaja Jai Singh II**, known as the **Vedh Shala or Jantar Mantar**, comprising **13 architectural instruments to measure astronomical phenomena**.
- Also, as per the **Surya Siddhanta**, one of the earliest available texts on Indian astronomy dating back to the **4th century**, **Ujjain is geographically situated at a spot where the zero meridian of longitude and the Tropic of Cancer intersect**.



Note:

Security

Highlights

- New Chief of Defence Staff (CDS)
- Light Combat Helicopter (LCH): Prachanda

New Chief of Defence Staff (CDS)

Why in News?

Recently, the central government appointed the former head of eastern command **Lt General Anil Chauhan** (retired) as the new **Chief of Defence Staff (CDS)**.

What is Chief of Defence Staff (CDS)?

- **Background:** Its creation was recommended in 2001 by a **Group of Ministers (GoM)** that was tasked with studying the **Kargil Review Committee (1999) report**.
 - After the GoM recommendations, in preparation for the post of CDS, the government created the **Integrated Defence Staff** in 2002, which was to eventually serve as the CDS's Secretariat.
 - In 2012, the **Naresh Chandra Committee** recommended the appointment of a Permanent Chairman of the Chiefs of Staff Committee as a midway to eliminate apprehensions over the CDS.
 - Finally, the post of **CDS was created in 2019** on the recommendations of a committee of defence experts headed by Lt General DB Shekatkar.
 - **General Bipin Rawat** was the first CDS in the country and was appointed on December 31, 2019.
- **Roles and Responsibilities:** His core function will be to foster greater operational synergy between the three service branches of the Indian military and keep inter-service frictions to a minimum.
 - He also heads the newly created **Department of Military Affairs (DMA)** in the Ministry of Defence.
 - The CDS will be the **single-point military adviser to the Defence Minister on matters involving all three services** and the service chiefs will be obliged to confine their counsel to issues pertaining to their respective services.

MINISTRY OF DEFENCE: WHO, WHAT

Department of Defence

Headed by Defence Secretary

Department of Military Affairs

Headed by the CDS

Department of Defence Production

Headed by Secretary Defence Production

Department of Defence Research and Development

Headed by DRDO chief

Department of Ex-servicemen Welfare

Headed by Secretary ESW

DUAL-HATTED ROLE OF CDS

- Permanent Chairman of the Chiefs of Staff Committee
- Head of Department of Military Affairs in Defence Ministry

- As the head of DMA, CDS is vested with the authority in organization inter-service procurement decisions as **Permanent Chairman-Chiefs of Staff Committee**.
- The CDS is also **vested with the authority to provide directives to the three chiefs**. However, he does not enjoy any command authority over any of the forces.
- CDS is **first among equals, he enjoys the rank of Secretary within the DoD** (Department of Defence) and his powers will be confined to only the revenue budget.
- He will also perform an advisory role in the **Nuclear Command Authority (NCA)**.
- **Significance:**
 - **Synergy between Armed forces and Government:** CDS' role is not simply about tri-service (Army, Navy

Note:

and Indian Air Force) cooperation, it is equally about fostering better cooperation between the Ministry of Defense bureaucracy and the Armed services.

- Since 1947, there have been three Service Headquarters (SHQ) designated as “Attached Offices” of the Department of Defense (DoD). Due to this, communication between SHQ and DoD takes place largely through the medium of files.
- With the creation of CDS as Principal Military Adviser (PMA) to Defense Minister, the process of decision-making will be accelerated.
- **Jointness in operations:** The Chiefs of Staff Committee-COSC (predecessor of CDS), has been dysfunctional because its chairmanship is held by one of the three chiefs on a part-time rotational basis.
 - Historically, **the chairman COSC lacked the authority** as well as capacity and inclination to tackle tri-service issues of substance.
 - With the CDS now being designated as “permanent chairman of COSC”, he will be able to devote undivided attention to the administration of tri-service organisations.
- **Operationalisation of Theatre Command:** Creation of DMA will facilitate the organization of joint/theatre command.
 - Although a successful template for joint operations was created in the **Andaman & Nicobar Command**, the lack of political direction and indifference of the COSC has led to inactivity of this joint command.
 - Theatre commands would need staff with the knowledge and experience to deploy land, maritime and air forces. Given the disruptive impact of each of these measures, they would best be implemented by the CDS.
- **CDS as a key functionary in the nuclear command chain** will also administer the **Strategic Forces Command**.
 - This measure will go a long way in enhancing the credibility of India’s nuclear deterrent.
 - The CDS would also initiate an early review of **India’s Nuclear Doctrine**.
- **In the approaching era of dwindling defence budgets**, a crucial function of CDS will be

“organization” the capital acquisition proposals of individual services.

Light Combat Helicopter (LCH): Prachanda

Why in News?

Recently, the **Indian Air Force** formally **inducted the indigenously developed multi-role Light Combat Helicopter (LCH)**, **Prachanda** which is suitable for operating in high-altitude battlefields.



What is a Light Combat Helicopter?

- **About:**
- The LCH is the **only attack helicopter in the world** which can land and take off at an altitude of 5,000 meters with a considerable load of weapons and fuel.
 - The **helicopter uses radar-absorbing material to lower radar signature** and has a significantly crash-proof structure and landing gear.
 - A **organizational cabin** offers protection from Nuclear, Biological and Chemical (NBC) contingencies.
 - The **helicopter is equipped with a countermeasure dispensing system** that protects it from enemy radars or infrared seekers of enemy missiles.
 - LCH is powered by **two French-origin Shakti engines** manufactured by the HAL.

Note:

➤ **Genesis:**

- It was during the **1999 Kargil war** that the need was first felt for a homegrown lightweight assault helicopter that could hold precision strikes in all Indian battlefield scenarios.
- This meant a **craft that could operate in very hot deserts** and also in very cold high altitudes, in counter-insurgency scenarios to full-scale battle conditions.
- India has been operating sub 3 ton category French-origin legacy helicopters, **Cheetah**, made in India by the **Hindustan Aeronautics Limited (HAL)**.

- These single engine machines were, primarily, utility helicopters. Indian forces also operate the Lancer, an armed version of Cheetah.

- In addition, the Indian Air Force currently operates the Russian origin Mi-17 and its variants Mi-17 IV and Mi-17 V5, with maximum take-off weight of 13 tonnes, which are to be phased out starting 2028.
- The **government sanctioned the LCH project in October 2006** and HAL was tasked to develop it.

➤ **Significance:**

- The LCH has the **capabilities of combat roles such as destruction of enemy air defence, counter insurgency warfare, combat search and rescue, anti-tank, and counter surface force operations.**



Note:

Ethics

Highlights

- Gita: The Art of Selfless Living and Dying
- Ethical Values from the Life of Lal Bahadur Shastri

- Abortion Rights v/s Ethics

Gita: The Art of Selfless Living and Dying

Why in News?

Gandhi's unwavering faith in high principles both in life and death were shaped by his love for the Bhagwat Gita and is a perfect example for all of us to follow.

Who was Mahatma Gandhi?

- Mohandas Karamchand Gandhi (2nd October 1869 – 30th January 1948), also remembered as '**Father of the Nation**', was the leader of India's independence movement against British rule.
- He was conferred with the title of **Mahatma (great-soul) Gandhi**.
- His life was dedicated to many other noble causes like poverty alleviation, women's rights, and eradication of the practice of untouchability, among others.
- He was the **pioneer of the nonviolence philosophy** that has inspired civil rights leaders across the world.
- His birthday, 2nd October, is celebrated as **Gandhi Jayanti** in India and conferred as the **International Day of Non-Violence**.

What is the Importance of Bhagwat Gita in Gandhi's Life?

- **A Gospel of Selfless Action:**
 - According to Gandhi, Gita teaches us the **only desire that is worth pursuing is to realize that we are the soul** (or self), aspire to become like Him (God) (i.e., possess his supreme qualities), and to attain eternal bliss instead of being **obsessed with material pursuits** such as fame, money, and relationships.

- This is the **process of self-realization**, which entails understanding that we are the soul (not the body and mind) and are caught in the endless cycle of life and death due to our karma.
- Karma simply means that **any thought, speech, or action undertaken** upon others will have a corresponding result in our lives.

➤ Role of Action:

- The Gita acknowledges that for the world to continue running, **action (whether mental or physical) needs to be taken**.
- The Gita says, "Do your allotted work but renounce its fruits- be detached and work- have no desire for reward and work."
- Renunciation of the fruits of one's actions is the **central message in the Gita**.
- Renunciation **does not mean indifference to results but a renouncer is the one who performs his duty with cheerfulness** and thoroughness and remains desireless of the fruit of the action.

➤ Ahimsa and Truth:

- Gandhi believed that **when one enforces the Gita's central teaching in life, one is bound to follow Ahimsa and Truth**.
 - Nonviolence or Ahimsa as per Gandhi Ji is described as the state to do no harm in thoughts, words and actions to all living beings.
 - It is **not just refraining from undertaking violent action** but also a whole way of life.
 - Since it extends to all living organisms, it encompasses **consuming vegetarian food, a sustainable lifestyle, and the protection of the environment**.
 - Because **when there is no desire for fruit, there is no temptation for untruth or himsa (violence)**.

Note:

- The cause of any untruth or himsa will be rooted in the fulfillment of attaining a desire fuelled by ego. For instance, sins like murder, theft, etc cannot be performed without attachment.
- **Serving God through the Service of Mankind:**
- A further message in the Gita is that mankind should serve God by serving one another and Gandhi adhered to this message unwaveringly.
 - To this, he elucidated how the soul's natural progress is towards selflessness and purity.
 - This is why he was able to effortlessly dedicate his whole life to the freedom and betterment of the lives of the people of India.
 - He believed that what we think of in the last moments will become who we are and by doing so one will acquire the qualities and nature of this God (or revered Gurus) in the next birth.
 - But for this to happen in the dying moment, one has to live a life free of attachment and aversion and have a heart that is ready to love and forgive all. Once we have mastered these skills, the peace we get should be channeled into spiritual practices.

Ethical Values from the Life of Lal Bahadur Shastri

Why in News?

In 2nd October, India celebrates the 118th birth anniversary of **Lal Bahadur Shastri**, the nation's second Prime Minister.

How can we Learn from Shastri's Life?

- **Against the Caste System:**
- Lal Bahadur Shrivastava was the son of Ramdulari Devi and Sharada Prasad Shrivastava. However, being against the prevailing caste system, he decided to drop his surname.
 - The title 'Shastri' was given after he completed his graduation at Kashi Vidyapeeth, Varanasi in 1925.
 - The title 'Shastri' refers to a 'scholar' or a person, adept in the holy scriptures. Shastri in this way showed a broad outlook at a very young age.
- **Taking Responsibilities during Adverse Times:**

- He was one of the giants in public life, who always took the country's myriad responsibilities on his shoulders.
 - In adverse situations, too, he came forward, held himself accountable, and demonstrated the qualities of a true leader.
 - He served as the **Railway Minister in Jawaharlal Nehru's Cabinet** and was so conscientious that he resigned following a train accident at Ariyalur in Tamil Nadu in 1956.
 - His gesture was hailed by all including Nehru, whom he considered as his "hero".
- **Inseparable Public and Private Life:**
- In 1965, **India was embroiled in war with Pakistan** and the country was facing acute food shortage.
 - There was added pressure with the United States threatening to cut supplies.
 - Faced with the crisis, Lal Bahadur Shastri announced to his family one evening that for the **next few days they would all give up on their evening meal**.

➤ **Morality:**

- It is said that **he had a Chevrolet Impala car for official use**, which his son once used for a drive.
 - When Shastri learned about it, he asked his driver to check the distance the car was used for and **later deposited the money in the government account**.

What Makes Shastri's Values Relevant Today?

- Indians should emulate the simplicity, humility, humanism, austerity, hard work, dedication, and nationalism displayed by the unassuming second prime minister of India today.
- Shastri's maiden Independence Day speech in 1964 is as relevant today as it was then, as he emphasized character and moral strength, which has acquired special significance as we witness all-round degeneration of values.

Abortion Rights v/s Ethics

Why in News?

Recently, in a landmark judgment, the **Supreme Court of India allowed abortions up to 24 weeks for all women**, including unmarried women.

Note:

Why is there a Debate over Abortion Rights and the Ethical Dilemma?

- **Issues with Respect to Women's Right:**
 - **Woman's Right over her Body:**
 - A woman's right over her body has been advocated as a premise for freedom.
 - One cannot force a woman to bear a child in her womb and give birth to a child if she does not want to do so for various reasons.
 - **Health:**
 - Unwanted pregnancies affect both physical and mental health.
 - **Gender Equality:**
 - The right to abortion is vital for gender equality.
 - The right to abortion should be part of a portfolio of pregnancy rights that enables women to make a truly free choice whether to end a pregnancy.
- **Issues with respect to Fetus:**
 - **Right to Life:** Abortion amounts to the murder of a living being.
 - **Motherly Care:** It is a unique unspoken bond shared between two lives, which cannot be questioned or regulated by laws.
- **Issues with respect to Society in General:**
 - **Responsibility of State:** The State has the responsibility of valuing each life.
 - **Inclusion of all:** Abortion should not become a mechanism of social control for avoiding the appearance of differences or disabilities.
 - **Giving better life for Existing Children:** Many times, parents want abortion to be able to give a good

life to existing children instead of dividing their meager resources into more children.

What are the Arguments against Abortion?

- Abortion is **not viewed by some as liberating**, but rather as a way for society not to cater to women's needs.
- Women don't need free abortion access, but their needs for financial and social survival as mothers are what they need for equality:
 - inexpensive, readily available childcare
 - a workplace or school that acknowledges the needs of mothers,
 - e.g., providing flexible scheduling and maternity leave,
 - state support that helps to reintegrate a woman into the workforce

What should be the Ethical approach to Abortion?

- Ethical approaches to abortion frequently invoke four principles.
 - Respect for patients' autonomy
 - Nonmaleficence (do no harm)
 - Beneficence (beneficial care) and
 - Justice
- The abortion dilemma has overlapping issues from different realms like legal, medical, ethical, philosophical, religious and human rights and it should be analysed from different perspectives.
- There cannot be any hard and fast rule over abortion and it must be discussed and deliberated to evolve a common consensus.



Note:

Miscellaneous

Highlights

- Nobel Peace Prize 2022
- 36th National Games
- US-Pacific Island Summit 2022
- Vande Bharat Express 2.0
- Nobel Prize
- SASTRA Ramanujan Prize 2022
- UAE's New Visa Rules
- Nobel Prize in Literature 2022
- Burkina Faso Coup
- Indian Air Force Day
- IBSAMAR VII
- THE World University Rankings 2023
- Indian Foreign Service (IFS)
- Marathon

Nobel Peace Prize 2022

Why in News?

Recently, the **2022 Nobel Peace Prize** was awarded to human rights advocate **Ales Bialiatski** from Belarus, the **Russian human rights organisation Memorial**, and the **Ukrainian human rights organisation Center for Civil Liberties**.

- The Prize recognizes their contribution for many years, **promoting the right to criticize power and protecting the fundamental rights of citizens**.
- With the awardees being from Belarus, Ukraine, and Russia, an implicit message has been sent about the **ongoing conflict between Russia and Ukraine**.
- In 2021, **Nobel Peace Prize** was awarded to journalists **Maria Ressa** of the Philippines and **Dmitry Muratov** of Russia for their efforts to safeguard freedom of expression, which is a precondition for democracy and lasting peace.
- Other 2022 Nobel Prizes for **Literature**, **Chemistry**, **Physics** and **Medicine** have already been announced.

Who are the Winners?

- **Belarus's Ales Bialiatski:**
 - Ales Bialiatski was one of the **initiators of the democracy movement in Belarus** in the mid-1980s."
 - Bialiatski is also **credited with founding the organisation Viasna (Spring)** in 1996 in response to the controversial constitutional amendments
- **Russian Human Rights Organisation, Memorial:**
 - The organisation was **established in 1987**, "by human rights activists in the former Soviet Union who wanted to ensure that the victims of the communist regime's oppression would never be forgotten."
 - **Nobel Peace Prize laureate Andrei Sakharov**, who won the prize in 1954, and **human rights advocate Svetlana Gannushkina** were among the organisation's founders.
 - It has been described as the largest human rights organisation in Russia, and in the present day, it helped in gathering information on "the political oppression and human rights violations in Russia".
- **Ukrainian Human Rights Organisation, Center for Civil Liberties:**
 - The Center for Civil Liberties was **founded in Kyiv in 2007** "for the purpose of advancing human rights and democracy in Ukraine".

that gave the president (Alexander Lukashenko) dictatorial powers.

- Over time, **Viasna evolved into a "broad-based human rights organisation** that documented and protested against the authorities' use of torture against political prisoners".
- In 2020, he was **one of the three recipients of the Right Livelihood Award** by the Swedish Right Livelihood Foundation, sometimes referred to as the "Alternative Nobel".
- He is the fourth person to get the Nobel Peace Prize in Jail.
- **Russian Human Rights Organisation, Memorial:**
 - The organisation was established in 1987, "by human rights activists in the former Soviet Union who wanted to ensure that the victims of the communist regime's oppression would never be forgotten."
 - **Nobel Peace Prize laureate Andrei Sakharov**, who won the prize in 1954, and **human rights advocate Svetlana Gannushkina** were among the organisation's founders.
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- **Ukrainian Human Rights Organisation, Center for Civil Liberties:**
 - The Center for Civil Liberties was founded in Kyiv in 2007 "for the purpose of advancing human rights and democracy in Ukraine".

Note:

- The Centre describes itself as “one of the leading actors in Ukraine, influencing the formation of public opinion and public policy, supporting the development of civic activism, and actively participating in international networks and solidarity actions to promote human rights”.
- After Russia’s invasion of Ukraine in February 2022, the Center for Civil Liberties has engaged in efforts to identify and document Russian “war crimes” against the Ukrainian civilian population.

Nobel Peace Prize 2022

Winners

- Belarus' Ales Bialiatski, Russian Human Rights Organisation Memorial, and Ukrainian Human Rights Organisation Center for Civil Liberties.
- The Peace Prize laureates represent civil society in their home countries.

Belarus' Ales Bialiatski

- Founded the organization Viasna (Spring) in 1996 in response to the controversial constitutional amendments that gave Lukashenko dictatorial powers.
- Over time, Viasna evolved into a “bread-based human rights organization that aims at exposing and helping rehabilitate those who suffered under communism.”
- In 2023, he was one of the three recipients of the Right Livelihood Award by the Swedish International Foundation, sometimes referred to as the “Alternative Nobel”.
- He is the fourth person to get the Nobel Peace Prize for his work in Germany's Carl Von Ossietzky (1980), Austria's Sean MacBride (1972), and India's Kailash Satyarthi (2014).

Russian Human Rights Organisation, Memorial

- Memorial was set up in 1987 with the aim of exposing repression and helping rehabilitate those who suffered under communism.
- Nobel Peace Prize laureate Andrei Sakharov (1984), a human rights advocate and Soviet dissident, was among the organization's founders.
- It has been described as the largest human rights organization in Russia, and it is the only organization providing information on “the political oppression and human rights violations in Russia”.
- It was ordered shut in Dec 2021 for breaking a law requiring certain civil society groups to register as foreign agents.

Ukrainian Human Rights Organization, Center for Civil Liberties

- It was founded in 2007 to promote human rights and democracy in Ukraine.
- After Russia's invasion of Ukraine in February 2022, the Center for Civil Liberties has engaged in efforts to identify and document Russian “war crimes” against the Ukrainian civilian population.

Indian Nobel Peace Laureates

- Kailash Satyarthi is an Indian social reformer who campaigned against child labor in India and advocated the universal right to education. In 2014, he was the co-recipient of the Nobel Peace Prize, along with Malala Yousafzai.
- Mary Teresa Bojaxhiu (Mother Teresa) an Albanian-Indian Catholic nun who, in 1960, founded the Missionaries of Charity. For her humanitarian work, she was awarded several honours, including the 1965 Ramon Magsaysay Peace Prize and the 1979 Nobel Peace Prize.

Medal

36th National Games

Why in News?

Recently, the 36th National Games was inaugurated by the Prime Minister in Gujarat.

What are the National Games?

- Background:** The Olympic movement, which garnered the attention of the nation in the 1920s, includes the National Games. The National Games in India were first envisioned as the **Indian Olympic Games** with the goal of promoting Olympic sports in the nation.
- The first edition** of the Indian Olympic Games at **Lahore** in an undivided Punjab in 1924.
- The Indian Olympic Games** were named as **National Games beginning in 1940**. This competition sets athletes from several Indian states with one another in a variety of sporting disciplines.
- Objectives:**
 - They are held for the benefit of Indian athletes, sports organisations etc.

Note:

- They help in raise awareness among states/UT's about the necessity of developing internationally grade sports infrastructure.
 - It attempts to attract a wide number of youths to participate in sports activities.
 - It aims to inculcate sports culture in individuals from all walks of life and educate them on the value of sports in building a healthy society.
- **Jurisdiction:** The duration and the regulations of the National Games are entirely within the jurisdiction of the **Indian Olympic Association**.

What are the key

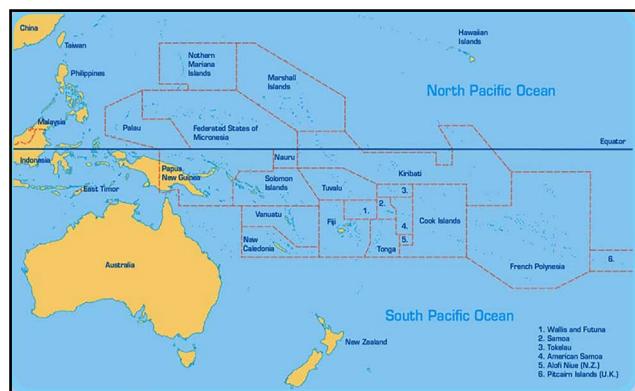
Highlights of 36th National Games?

- Event:** The National Games, being held after seven years, will witness India's best athletes compete in 36 disciplines in six cities of Gujarat.
- Mascot:** The Official mascot for the 36th National Games is “SAVAJ”, it portrays a sportsman's most prominent personality traits of self-confidence, vigour, a strong sense of motivation, an inner desire to succeed, a strong sense of focus, a natural leader, and a goal setter
 - Savaj-taranhar(સવાજ તરણહર) in gujarati means “Savior” in English. Savaj is the representation of The **Asiatic Lion**, which today survives only in wild India.

US-Pacific Island Summit 2022

Why in News?

Recently, the US President hosted the first-ever **U.S.- Pacific Island Country Summit** in Washington, D.C, and announced **USD 810 million in funding for Pacific Islands**.



What were the Key Highlights of the Summit?

- **Expand US Presence:** The announced USD 600 million will be in the form of a **10-year package** to clean up and **develop dirty waters to support the tuna industry**, which will also expand climate and development aid and its diplomatic presence.
- **Countering China's Aggressive Policy:** China had made inroads in the strategic but sparsely populated region by asserting itself strongly in recent years in the pacific islands through investment, police training and, most controversially, a **security pact with the Solomon Islands**. Therefore, the US is re-engaging with the region that has been tied closely to it since World War II.
- **Forging Alliances:** The US administration recently **formed Partners in the Blue Pacific with Australia, New Zealand, Japan and Britain** and further said that Canada and Germany will join and that France, itself a South Pacific power, as well as the **European Union, South Korea and India would participate as non-members**.

What are Pacific Island Countries?

- **About:** The Pacific Island Countries are a **cluster of 14 states which are located largely in the tropical zone of the Pacific Ocean** between Asia, Australia and the Americas.
 - They include Cook Islands, Fiji, Kiribati, Republic of Marshall Islands, Federated States of Micronesia (FSM), Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.
- **Significance:**
 - **Largest Exclusive Economic Zones (EEZs):** The islands are divided on the basis of physical and human geography into three distinct parts — **Micronesia, Melanesia and Polynesia**.
 - Despite their small land area, the **islands are spread out over a wide swath of the Pacific Ocean**. Kiribati and FSM, have EEZs larger than that of India.
 - **Economic Potential:**
 - Large EEZs have a **great deal of economic potential** since they can be used to exploit the wealth of fisheries, energy, minerals, and other marine resources present there.
 - **Potential Vote Bank:** The 14 PICs, bound together

by shared economic and security concerns, account for as **many votes in the United Nations**, and act as a potential vote bank for major powers to mobilise international opinion.

Vande Bharat Express 2.0

Why in News?

Recently, the Prime Minister flagged off Gandhinagar-Mumbai Vande Bharat Express 2.0 at Gujarat's Gandhinagar station.

- Earlier, two Vande Bharat Expresses were operational —one between New Delhi and Varanasi and the other from New Delhi to Katra.

What are Vande Bharat Trains?

- It is an **indigenously designed and manufactured semi high speed**, self-propelled train that is touted as the next major leap for the Indian Railways in terms of speed and passenger convenience since the introduction of Rajdhani trains.
- The first Vande Bharat was manufactured by the **Integral Coach Factory (ICF), Chennai** as part of the **'Make in India' programme**, at a cost of about Rs. 100 crore.
- The Vande Bharat was **India's first attempt at adaptation of the train set technology** compared with conventional systems of passenger coaches hauled by separate locomotives.
- The train set configuration, though complex, is faster, easier to maintain, consumes less energy, and has greater flexibility in train operation.

What are the Features of the Vande Bharat Trains?

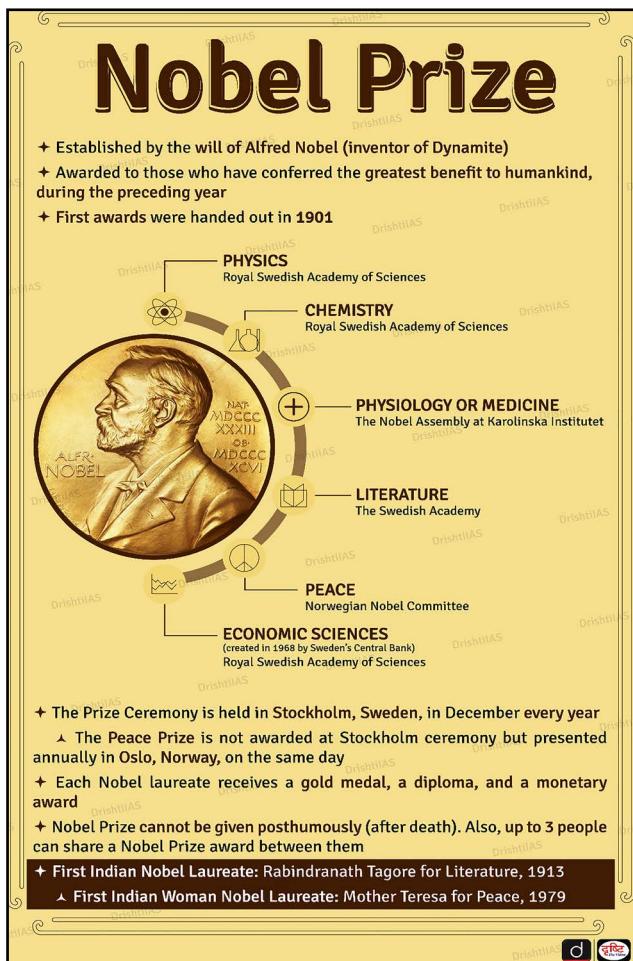
- These trains, dubbed as **Train 18 during the development phase**, operate without a locomotive and are based on a propulsion system called distributed traction power technology, by which each car of the train set is powered.
- It can **achieve a maximum speed of 160 kmph** due to faster acceleration and deceleration, reducing journey time by 25% to 45%.
- It also has an intelligent braking system with power regeneration for better energy efficiency thereby making it cost, energy and environment efficient.

Note:

What are the Features of Vande Bharat 2.0?

- The Vande Bharat Express 2.0 offers a myriad of superior and aircraft-like travelling experiences.
- It is equipped with advanced state-of-the-art safety features including an indigenously developed Train Collision Avoidance System – KAVACH.
- In the new design of Vande Bharat Express, a photo-catalytic ultraviolet air purification system is installed in the Roof-Mounted Package Unit (RMPU) for air purification.

Nobel Prize



SASTRA Ramanujan Prize 2022

Why in News?

The SASTRA Ramanujan Prize for 2022 will be awarded to Yunqing Tang, Assistant Professor with the University of California, Berkeley, U.S.A.

Note:

- Ms. Yunqing's works display a remarkable combination of sophisticated techniques, in which the arithmetic and geometry of modular curves and of Shimura varieties play a central role, and her results and methods are bound to have major impact on future research in this area.

What are the Key Points of the Awards?

- The award was instituted by the Shanmuga Arts, Science, Technology & Research Academy (SASTRA) in 2005.
- A cash prize of USD 10,000 is presented annually to individuals aged 32 and below, who made outstanding contributions in the field of mathematics, influenced by Srinivasa Ramanujan in a broad sense.

Who was Srinivasa Ramanujan?

- **About:**
 - Ramanujan was born on 22nd December 1887 in the village Erode (400 km from Chennai, then known as Madras).
 - The famous British mathematician Godfrey Harold Hardy organized his talent in 1913. He went to Cambridge, on Godfrey Harold Hardy's invitation.
 - Ramanujam made substantial contributions to the analytical theory of numbers and worked on elliptic functions.
 - He also worked on the partition of the whole number, hypergeometric series and Euler's constant.
 - His papers were published in English and European journals, and in 1918 he was elected to the Royal Society of London.
 - He died on April 26th, 1920, at the age of 32, just after returning to India after a long illness.
 - In India, 22nd December is celebrated as National Mathematics Day in the memory of Srinivasa Ramanujan.
- **Contributions:**
 - **Formulas and Equations:**
 - Ramanujan compiled around 3,900 results consisting of equations and identities. One of his most treasured findings was his infinite series for Pi.
 - He gave several formulas to calculate the digits of Pi in many unconventional ways.
 - **Game Theory:**

- He discovered a long list of new ideas to solve many challenging mathematical problems, which gave a significant impetus to the development of game theory.
- His contribution to game theory is purely based on intuition and natural talent and remains unrivaled to this day.
- **Ramanujan's Book:**
 - One of Ramanujan's notebooks was discovered by George Andrews in 1976 in the library at Trinity College. Later the contents of this notebook were published as a book.
- **Ramanujan number:**
 - 1729 is known as the Ramanujan number.
 - It is the smallest number which can be expressed as the sum of two different cubes in two different ways.
- 1729 is the sum of the cubes of 10 and 9 – cube of 10 is 1000 and cube of 9 is 729 adding the two numbers results in 1729.
- 1729 is also the sum of the cubes of 12 and 1, cube of 12 is 1728 and cube of 1 is 1 adding the two results in 1729.

UAE's New Visa Rules

Why in News?

Recently, the United Arab Emirates' (UAE's) has announced **new visa rules** in order to attract tourists as well as those who wish to work or live in the UAE.

- A visa is an official document that allows the **bearer to legally enter a foreign country**.



Note:

What are the Key Changes?

- **Three categories:** Entry visa, Green visa and Golden visa.
- For the first time, the UAE has introduced entry visas that **do not require a host or sponsor for visitors**. Entry visas or Tourist Visas will now be available for **single or multiple entries and will be valid for 60 days** unlike the previous 30-day period.
- The **Green Visa** is a type of renewable-residence visa that allows foreigners to sponsor themselves for five years, without having to rely on a UAE national or employer to sponsor their visa. It replaces the previous residence visa that was valid only for two years.
- The **Golden visa** offers **holders long-term renewable residence visas** for upto 10 years. Those that are eligible for the Golden visa include investors, entrepreneurs, individuals with exceptional talents the likes of researchers, medical professionals and those within the scientific and knowledge fields and outstanding students and graduates.
 - Skilled professionals can get **long-term residency** if they have a minimum monthly salary requirement of **AED (United Arab Emirates Dirham) 30,000** a month. Investors can also get the visa when purchasing a property worth at least AED two million.
- The updated visa system is an attempt at **improving the quality of life and making the experience of living, working and investing in the UAE a pleasant and happy one**.

How will it Benefit Indians?

- The Indian expatriate community of approximately **3.5 million constitutes about 30% of the UAE population**.
- The restructuring of its entry and residence system will further **boost the country's image as an ideal destination for work and investment**.
- Thousands of talented professionals are expected to find employment in the UAE and **tourists can now experience a hassle-free vacation** with the simplified visa system.

Nobel Prize in Literature 2022

Why in News?

The 2022 Nobel Prize in Literature has been awarded to French author "Annie Ernaux" for "the courage and

clinical acuity with which she uncovers the roots, estrangements and collective restraints of personal memory".

- In 2021, the award was given to novelist **Abdulrazak Gurnah** "for his uncompromising and compassionate penetration of the effects of colonialism and the fate of the refugee in the gulf between cultures and continents".
- The Nobel Prizes in **Physics, Chemistry and Medicine** for 2022 have already been awarded.

Who is Annie Ernaux?

➤ About:



- Annie was **born in 1940** and brought up in the small town of **Yvetot in Normandy (France)**.

- She went on to study at the **universities of Rouen** and then **Bordeaux** from where she qualified as a schoolteacher and gained a **higher degree in modern literature**.

➤ Career & Work:

- Her exemplary literary career started with the publication of her first book, **Cleaned Out**, in **1974**.

- Her other major work includes "**A Women's Story**", "**Happening**", "**A Girl's Story**", "**Getting Lost**".

○ Themes of her work:

- Her books talk about the body and sexuality; intimate relationships; social inequality and the

experience of changing class through education; time and memory; and the overarching question of how to write these life experiences.

- Her books have explored how shame is built into the female consciousness, and how women censor and judge themselves even in personal spaces such as a diary.

➤ Awards & Recognition:

- Her works overall have received the **French language prize** and the **Marguerite Yourcenar prize**.
- In 2014 she was awarded **an honorary doctorate by the University of Cergy-Pontoise**.
- Her work "**The Years**" was shortlisted for the **Man Booker International prize**.

Nobel Prize in Literature 2022



WINNER

Annie Ernaux (France)
For the courage and clinical acuity with which she uncovers the roots, estrangements and collective restraints of personal memory.

THEME OF WORK

Her writing consistently and from different angles, examines a life marked by strong disparities regarding gender, language and class.

AWARDS & RECOGNITION

French Language Prize | Marguerite Yourcenar prize | Honorary doctorate by the University of Cergy-Pontoise 2014 | "The Years" was shortlisted for the Man Booker International prize

NOTABLE WORK

A Man's Place 1984	Shame 1997	The Possession 2002	A Girl's Story 2016
Cleaned Out 1974	A Women's Story 1988	Happening 2000	The Years 2008

INDIAN NOBEL PRIZE LAUREATE

Rabindranath Tagore is the only Indian to receive a Nobel Prize in Literature (1913). Major Work: Gitanjali, Chokher Bali, The Postmaster, Gora, Kabuliwala (The Fruitseller from Kabul), Sadhana: The realization of life, etc.



Burkina Faso Coup

Why in News?

Recently, the **President of Burkina Faso, Paul-Henri Damiba announced his resignation following violence** in the volatile West African nation after the military government was overthrown by a group of soldiers in the second coup in around eight months.

- Despite Damiba's promises to improve the security situation in the country, the crisis worsened under his government.

Note:

- The West African regional bloc **Economic Community of West African States (ECOWAS)** suspended Burkina Faso from the organization, demanding Damiba led Government to hold elections as soon as possible.



What is the History of Burkina Faso?

- A former French colony, **Burkina Faso has suffered chronic instability** since gaining independence in 1960, including several coups.
- The country's name, meaning "**land of the honest men**", was picked by revolutionary military officer Thomas Sankara who took power in 1983. He was toppled and killed in 1987.
- Since 2015, the **country has been fighting an Islamist insurgency** that spilled over from neighbouring Mali. This has fuelled anger in the military and damaged the once important tourist industry.
- Landlocked Burkina Faso, **one of West Africa's poorest countries** despite being a gold producer, has experienced numerous coups since independence from France in 1960.
- Islamist militants control swathes of Burkina Faso's territory and have forced residents in some areas to abide by their harsh version of Islamic law, while the military's struggle to quell the insurgency has drained scarce national resources.

Note:

Indian Air Force Day

Why in News?

The **Indian Air Force (IAF)** is celebrating 90th Air Force Day on 8th October.

What are the Key Highlights of the celebrations?

- The primary event of the day is being observed at **Chandigarh Air Force Station** and consists of a **parade and flyover**.
- LCH "Prachanda, Light Combat Aircraft (LCA) Tejas, Sukhoi, Mig-29, Jaguar, Rafale, IL-76, C-130J, and Hawk have taken part in the fly-past.
- Among **helicopters, Advanced Light Helicopter Dhruv, Chinook, Apache and Mi-17** will be part of the aerial display.

What is the Indian Air Force?

- **Background:**
 - The **Indian Air Force** was established in 1932 during **World War II** to support the Royal Air Force of the United Kingdom in its war against Japan.
 - To stop the Japanese army's progress into India, the IAF was utilised to target Japanese bases in Burma.
 - In 1945, **King George VI** bestowed the prefix "**Royal**" in recognition of the IAF's accomplishments. After India became a **republic in 1950**, this honorary title was abolished.
 - After the independence of the nation, it evolved into the **Indian Air Force in 1950**.
- **About:**
 - President of India is the Supreme Commander of the Armed Forces,
 - The **fourth-largest air force** in the world is the **Indian Air Force**.
 - **Headquarters:** New Delhi
 - Motto of India Air Force: **Touch the sky with Glory**.
 - It was taken from the **eleventh chapter of the Bhagavad Gita**.
 - The **Chief of Air Staff, an air chief marshal** is responsible for the operational command of the air force.

What are the most Significant Operations of the IAF?

- After independence, IAF took part in wars with Pakistan and the People's Republic of China.
- **Operation Meghdoot:** To regain control of the heights commanding the Siachen glacier, the Indian Army, Indian Air Force, and paramilitary troops launched “**Operation Meghdoot**” on **April 13, 1984**.
- IAF took part in relief operations during natural calamities such as **Gujarat cyclone** in 1998, the **tsunami** in 2004, etc.
- Other significant operations of the IAF:
 - **Operation Vijay** (1961)
 - **The Second Kashmir War** (1965)
 - **The Bangladesh Liberation War (1971)**
 - **Operation Poomalai** (1987)
 - **Operation Cactus** (1988)
 - **The Kargil War (1999)**
 - **The Balakot airstrike**
 - **The India-Pakistan standoff of 2019**

IBSAMAR VII

Why in News?

INS Tarkash reached Port Gqeberha (also known as Port Elizabeth), South Africa to participate in the seventh edition of **India-Brazil-South Africa Maritime (IBSAMAR)** i.e., IBSAMAR VII.

- IBSAMAR is an important part of **IBSA trilateral defence cooperation**.

What is IBSAMAR VII?

- It is a **joint Multinational Maritime Exercise between the Indian, Brazilian and South African Navies** currently being held in South Africa from **10-12 October, 2022**.
 - The previous edition of IBSAMAR (IBSAMAR VI) was conducted in Simons Town, South Africa in 2018.
- The Indian Navy is represented by the **Teg class guided missile frigate, INS Tarkash**, a Chetak helicopter and the personnel from the Marine Commando Force (MARCOS).
- The harbour phase of IBSAMAR VII includes professional exchanges such as damage control and fire-fighting drills, Visit, Board, Search, and Seizure (VBSS)/cross boarding lectures and interaction among special forces.

- The Joint Maritime Exercise will strengthen maritime security, joint operational training, sharing of best practices and building interoperability to address common maritime threats.

What are India's Other Maritime Exercises?

- **Thailand:** **India-Thailand Coordinated Patrol (Indo-Thai CORPAT)**
- **United Kingdom:** **Konkan - Shakti**
- **Indonesia:** **Samudra Shakti**
- **Singapore:** **Singapore-India Maritime Bilateral Exercise (SIMBEX)**
- **Qatar:** **Zair-Al-Bahr**
- **Japan:** **Maritime Partnership Exercise (MPX)**

What is IBSA?

- **About:**
 - The IBSA is a **trilateral, developmental initiative between India, Brazil and South Africa** to promote South-South cooperation and exchange.
 - The idea of South-South Cooperation (SSC) is not new. Its genesis can be traced back to the decades of efforts by countries and groupings working together to ensure South-South solidarity such as **Bandung conference 1955, Non-Aligned Movement 1961, G77 grouping, United Nations Conference on Trade and Development (UNCTAD), the Buenos Aires Plan of Action 1978, and the 2009 Nairobi declaration**.
- **Formation:**
 - The grouping was **formalized and named the IBSA Dialogue Forum** when the Foreign Ministers of the three countries met in Brasilia (Brazil) on 6th June 2003 and issued the **Brasilia Declaration**.
- **Headquarters:**
 - IBSA does not have a headquarters or a permanent executive secretariat.
- **IBSA Fund:**
 - Established in 2004, **IBSA Fund (India, Brazil and South Africa Facility for Poverty and Hunger Alleviation)** is a unique Fund through which development projects are executed with IBSA funding in fellow developing countries.
 - The fund is **managed by the United Nations (UN) Office for South-South Cooperation (UNOSSC)**. Each IBSA member country is required to contribute \$1 million per annum to the fund.

Note:

THE World University Rankings 2023

Why in News?

Recently, the Times Higher Education (THE) rankings 2023 were released.

- Earlier, **QS World University Ranking 2023** was released.

What is Times Higher Education?

- THE, formerly known as **The Times Higher Education Supplement (THES)**, is a magazine reporting specifically on news and issues related to higher education.
- The Times Higher Education World University Rankings include 1,799 universities across 104 countries and regions, making them the largest and most diverse university rankings to date.
- This is based on 13 performance indicators that measure an institution's performance across four areas: teaching, research, knowledge transfer and international outlook and is trusted worldwide by students, teachers, governments and industry experts.

What are the Key Highlights of the Ranking?

- **Parameters:**
 - The parameters based on which the institutes are ranked are **teaching (30%)**, **research (30%)**, **citations (30%)**, **international outlook (7.5%)**, and **industry outcome (2.5%)**. In teaching and research, 15% weightage each is based on a reputational survey.
- **Global Top Performer:**
 - The **University of Oxford** has emerged as the best institute among 1,799 universities from 104 countries.
- **Indian Institutions:**
 - **Rankings:** India is the sixth most represented country in the 2023 rankings with 75 ranked universities.
 - The **Indian Institute of Science (IISc)** is at the **top position among Indian institutes**, for its performance score for teaching and research.
 - Globally, the IISc is placed in the 251-300 band.
 - IISc was the top-ranking Indian Institute in the **2022 rankings** as well.
 - The second position among Indian institutions has been taken by Himachal Pradesh based **Shoolini University of Biotechnology and**

Management Sciences (351-400 overall), which made its debut in the rankings.

- IIT Ropar which was the second highest ranking Indian institute in 2022 rankings, slipped to 6th position.
- The third position is backed by Tamil Nadu's **Algappa University**, a public institution.
- **Response from IITs:** It has been **boycotted by most Indian Institutes of Technology (IITs)** for the third consecutive year over transparency concerns.
- The last time major IITs participated in the rankings was in 2019 when IIT Bombay and IIT Delhi were placed in the 401-500 overall band behind IIT Ropar and IIT Indore.

INDIAN UNIVERSITIES IN THE TOP 500

Institution	2023 Rank	2022 Rank	Change
Indian Institute of Science	251-300	301-350	up 1 group
JSS Academy of Higher Education and Research	351-400	351-400	no change
Shoolini University of Biotechnology and Management Sciences	351-400	NR	
Algappa University	401-500	501-600	up 1 group
Mahatma Gandhi University	401-500	601-800	up 2 groups

What are the Related Indian Initiatives?

- **Institutions of Eminence (IoE) Scheme:** **Institutions of Eminence (IoE) Scheme** is a government scheme to provide the **regulatory architecture for setting up or upgrading 20 Institutions** (10 from the public sector and 10 from the private sector) as world-class teaching and research institutions called 'Institutions of Eminence'.
- **National Education Policy, 2020:** **National Education Policy, 2020** aims to introduce several changes in the Indian education system - from school to college- and make India a global knowledge superpower.
- **Impacting Research Innovation and Technology (IMPRINT):** **Impacting Research Innovation and Technology (IMPRINT)** is a first-of-its-kind Pan-IIT and IISc joint initiative to develop a new education policy and a roadmap for research to solve major engineering and technology challenges that India must address and champion to enable, empower and encourage the nation for inclusive growth and self-reliance.
- **Uchhatar Avishkar Yojana (UAY):** **Uchhatar Avishkar Yojana (UAY)** was announced with a view to promote innovation of a higher order that directly impacts the needs of the industry and thereby improves the competitive edge of Indian manufacturing.

Note:

Indian Foreign Service (IFS)

Why in News?

Every year, Indian Foreign Service (IFS) Day is celebrated on 9th October.

Why is Indian Foreign Service (IFS) Day Celebrated?

➤ About:

- Indian Foreign Service Day is celebrated to commemorate the day the Indian Cabinet created the Foreign Service.

➤ Origin:

- The Indian government established the Indian Foreign Service for India's diplomatic, consular and commercial representation overseas on 9th October 1946.
- With independence, there was a near-complete transition of the Foreign and Political Department into what then became the new Ministry of External Affairs.
- The origin of the Indian Foreign Service can be traced back to **British rule when the Foreign Department was created to conduct business with the "Foreign European Powers".**

➤ Offices under IFS:

- Ambassador, High Commissioner, Consul General, Permanent Representative of India to the United Nations and Foreign Secretary are some of the offices held by the members of the Indian Foreign Service.

How do Foreign Service Officers Contribute to the Country?

- As a career diplomat, the Foreign Service Officer is required to project India's interests, both at home and abroad on a wide variety of issues.
- These include **bilateral political and economic cooperation, trade and investment promotion, cultural interaction**, press and media liaison as well as a whole host of multilateral issues.
- During the **Russia-Ukraine war**, the splendid manner in which officers rose to the challenges of **Operation Ganga** was recognised by the entire nation.

- Operation Ganga was an evacuation operation by India to evacuate the Indian citizens amidst the 2022 **Russian invasion of Ukraine**, who had crossed over to neighboring countries.

➤ Under the **Vande Bharat Mission**, lakhs of Indians have been brought back by air, sea and land across multiple borders.

➤ Over the years IFS has produced **President and Vice President of India, Speaker of Lok Sabha, Ministers, Parliamentarians, noted authors, scholars, historians and international public servants** from its ranks.

Marathon

Why in News?

Kenya's **Eliud Kipchoge**, who is regarded as the **world's greatest marathon runner**, broke his own world record by 30 seconds at the Berlin Marathon.

- It was a major improvement over his **2:01:39 set four years ago in Berlin**.
- The Berlin marathon course is considered the fastest in the world because of the flat smooth roads.

What is a Marathon?

➤ Origin:

- The word marathon comes from a **Greek legend that tells the story of Pheidippides**, who ran from the Plains of Marathon all the way to Athens in 490 BCE to spread the news of the Greeks' victory over the Persian army.
- The running race based on the story was **first introduced at the Olympic Games in 1896**.

➤ About:

- It is a race in which **people run on roads over a distance of 42 kilometres or about 26 miles**.
- It is an activity that takes a long time to complete and needs a lot of energy and determination.

➤ Another Important Athlete:

- One of the greatest marathon runners of all time was **Abebe Bikila of Ethiopia**.
 - He became the **first black African to win Olympic gold** by winning the marathon in a world record time at the **1960 Rome Games**.
- Four years later he became the first man in history to successfully defend the title.



Note:

Key Points

Details

Summary

Key Points**Details**

Summary