

CURRENT AFFAIRS

WEEKLY

WEEK: 2

MAY
2022

MAINS

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- Relations with Thailand: India's bridge to Southeast Asia

GS-II

- Sports as Fundamental Right
- Can Aadhar data be shared for the purpose of criminal law enforcement?
- Cooling off period and its need in Civil Services
- Increasing incidents of Mob-lynching
- Delimitation Commission changes the electoral map of Jammu & Kashmir
- Inter-state arrests: A messy affair

GS-III

- How nutrient-deficient are Indian soils?
- Mine e-waste, not the Earth
- International Conference on Disaster Resilient Infrastructure (ICDRI)
- Open source technology
- What Does A Weak Rupee Mean For The Economy?
- All is not well with Gig Economy
- What Is the Significance of Semiconducting Devices in Indian Economy

GS-IV

- Constitutionality and Morality of Abortion

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ART & CULTURE

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- India announces world's largest film restoration project
- Lepakshi temple
- Iron Age in Tamil Nadu dates back 4,200 years, 'oldest in India'

GOVERNMENT

- Cyclonic storm Asani

POLITY &
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- Jog Falls project suffers setback as Centre asks Karnataka about impact assessment
- Total Fertility Rate
- e-passport
- Floating Border Outposts on Indo-Bangladesh Border

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- The Indian leg of the Great Backyard Bird Count records an impressive 1,017 species
- Hathi Mitras: Chhattisgarh's solution to tackling human-elephant conflict
- UN Convention to Combat Desertification's COP15.

SCIENCE &
TECHNOLOGY

- Shigella infection in Kerala
- VPN Regulations
- NASA climate scientist wins World Food Prize
- NASA to shut down SOFIA telescope that found water on Moon
- New 3D printed gloves
- ISRO plans mission to Venus by Dec. 2024
- How did Moon get its water? A new study suggests Earth's magnetic field could be involved
- Rare 'black widow' binary star with shortest orbit ever identified
- Monkeypox, a smallpox-like disease has been reported in the UK

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The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

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SECTION: A
(MAINS)

CURRENT AFFAIRS

RELATIONS WITH THAILAND: INDIA'S BRIDGE TO SOUTHEAST ASIA

CONTEXT:

- Since 1947, India has enjoyed dynamic bilateral relations with Thailand. 2022 marks the 75th year of diplomatic ties between the two nations.

Overview:

- History of India-Thailand relations
 - Since 1947-1991
 - India the Post-Cold War Period
 - Cooperation between India and Thailand in 21st Century
- What are the core areas of cooperation between India and Thailand?
 - Security Cooperation between the two countries in the 21st Century
 - Emerging India-Thailand Maritime Cooperation
 - Bilateral Military Exchange
 - India-Thailand Counter-terrorism mechanism
- Growing Economic Engagement between India and Thailand
 - India-Thailand Economic Relations
 - Further of Economic Relations between the two countries
 - Connectivity Cooperation between India and Thailand

been using the water between the two nations in order to carry out trade.

- Ancient Thailand's contact with India through trade eventually brought ideas, culture, language and technologies from a region where urban centres had already developed.

History of India-Thailand relations:

- Since 1947 to 1991:**
 - In the post India independence period, Indo-Thai relations had no doubt remained lukewarm with neither the King nor the Prime Minister of Thailand during 1947-76, paying a State visit to India.
 - The reason for above being that Thailand was an ally of United States and part of South East Asia Treaty Organisation.

The **Southeast Asia Treaty Organization (SEATO)** was an international organization for collective defence in Southeast Asia created by the Southeast Asia Collective Defense Treaty, or Manila Pact, signed in September 1954 in Manila, the Philippines.

United States led the group, while Pakistan was also a member of it.

◎ BACKGROUND:

- India and Thailand, located in each other's extended neighborhood, share a maritime boundary in the Andaman Sea.
- Thailand was one of the first countries to establish diplomatic relations with India in 1947, while the economic and cultural relations between the two could be traced back to more than 2000 years and provide the very foundation of the bilateral relationship.
- The ancient cultural threads that linked Thailand, Laos, Cambodia, and Myanmar have often been so-called the 'Indianised' States in Southeast Asia.
- India and Thailand located in each other's extended neighbourhood share a unique civilizational linkage.
- Further, Indian traders since ancient times have
- The organization's headquarters were also in Bangkok. Eight members joined the organization.
- Though change in Thailand's diplomatic stance could be seen when in 1971 it remained neutral during India-Pakistan conflict.
- Hopes of upswing in the relations between India and Thailand did not blossom though the 1980s as the latter was not happy with former's response to Kampuchea crisis.

In the Post-Cold War Period:

- Prime Minister P V Narasimha Rao chose Thailand for his first visit outside the subcontinent in 1993.
- The announcement of the 'Look East' policy in 1994 which coincided with India's economic reforms

provided the very platform Thailand was seeking, in expanding its bilateral trade and commerce with India.

- The '**Look West**' policy announced by the Thai government in 1997 sought the strengthening of the existing bilateral relations with regions beyond Southeast Asia.
- The current PM of Thailand Mr Chan-o-cha made a State visit to India in June 2016 during which both sides agreed to further enhance security and economic cooperation.
 - ▶ During this visit Both sides discussed issues that included politics, security, maritime security, trade and investment, digital cooperation, rubber and palm oil trade, regional connectivity, Indo – Pacific Partnership and Thailand's readiness to accept the Coordinatorship for ASEAN - India Dialogue Relations in August 2018

What are the core areas of Cooperation between India and Thailand in the 21st Century?

- High Level Exchanges: Regular visits between the Prime Ministers of both the countries demonstrate the expanding horizon of relationship between India and Thailand.

High Level Exchanges	
Dignitary visiting Thailand	Period
PM Narendra Modi	10 Nov 2016 (To pay homage to HM late King Bhumibol Adulyadej, the Great), 02-04 Nov 2019 (to attend ASEAN related Summits: 16th ASEAN India Summit, 14th East Asian
Vice President M. Hamid Ansar	Feb 2016
PM Dr. Manmohan Singh	July 2004, Oct 2009, May 2013
PM Atal Bihari Vajpayee	Nov 2002 (transit), Oct 2003
PM P. V. Narasimha Rao	April 1993
PM Rajiv Gandhi	Oct 1986
President V. V. Giri	1972

Vice President Dr. Zakir Hussain	1966
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- **International Forums:** They cooperate closely in the:
 - ▶ ASEAN
 - ▶ East Asia Summit (EAS)
 - ▶ Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)
 - ▶ Mekong Ganga Cooperation (MGC)
 - ▶ Asia Cooperation Dialogue (ACD)
 - ▶ Indian Ocean Rim Association (IORA)
 - ▶ Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS)
- **Trade relations**
 - ▶ In 2021, Thailand became India's fourth largest trading partner in ASEAN.
 - ▶ Trade between India and Thailand reached US\$11.88 billion in 2019, which reduced to US\$ 9.92 billion in 2020, owing to the major disruptions caused by the pandemic. In 2021-22, Thailand was India's 22nd top trade partner, with a total trade of US\$ 6.6 billion.
 - ▶ Bilateral trade during the current year is poised to surpass US\$12 billion despite the pandemic. ASEAN India Trade in Goods Agreement (AITIGA) and Early Harvest Scheme between India and Thailand have played an important role in the growth of bilateral trade and investment.
- **Defence cooperation:** The MoU on Defence Cooperation between India and Thailand was signed on 25 Jan 2012. Since 2015, India is participating in Ex-Cobra Gold, the largest Asia Pacific Military exercise as 'Observer Plus' category.
- **India-Thailand Counter Terrorism Cooperation:** A bilateral MOU on Defence cooperation was signed during the January 2012 Thailand PM's visit.
 - ▶ In the area of counter terrorism according to the MOU both sides resolved to significantly enhance bilateral cooperation in combating terrorism, including in restricting transnational movement and unauthorized stay of known terrorists in each other's countries.

© **CONCLUSION**

- The Indo-Thai relation today is not just looked upon from the angle of socio-cultural ties. Since

the relation in today's context has become very comprehensive in its scope. This bilateral engagement has the potential to foster growth not only restricted to the two nations but for the entire region.

- This is very much evident given the fact that cooperation in the areas of security, economic, and connectivity being interconnected, would also have the same level of impact on the neighbouring States and the region as a whole.

SPORTS AS FUNDAMENTAL RIGHT

CONTEXT:

- ▣ The Supreme Court has asked the Centre and States to respond to a report recommending sports to be expressly made a fundamental right under Article 21 of the Constitution.

Overview

- Context
- Background
- Why playing sports is important for children?
 - ▶ Development benefits
 - ▶ Emotional benefits
 - ▶ Social benefits
- What are the main recommendations of the report?
- Initiatives by Government of India to promote sports

● Social Benefits:

- ▶ Playing in a team helps children to develop many of the social skills they will need for life. It teaches them to cooperate, to be less selfish, and to listen to other children.
- ▶ It also gives children a sense of belonging. It helps them make new friends and builds their social circle outside school.
- ▶ An important part of playing in a team is accepting discipline. Playing sport means children are expected to follow rules, accept decisions and understand that they could be penalised for bad behaviour. It teaches them to take directions from the coach, referees and other adults. Sport also teaches them about team work.

◎ BACKGROUND:

- Supreme Court's amicus curiae, Senior Advocate Gopal Shankar Narayanan, has submitted a report to the Apex court suggesting that sports be made Fundamental Right.
- This report has been submitted in response to the petition which was filed before the Supreme Court of India praying for sports to be made a Fundamental Right.

Why playing sports is important for children?

● Developmental benefits:

- ▶ Playing sport helps children learn to control their emotions and channel negative feelings in a positive way.
- ▶ It also helps children to develop patience and understand that it can take a lot of practice to improve both their physical skills and what they do in school.

● Emotional benefits:

- ▶ Physical activity has been shown to stimulate chemicals in the brain that make you feel better. So playing sport regularly improves children's overall emotional wellbeing.
- ▶ Research shows playing sport improves self-esteem in children.

What are the main recommendations of the report?

- This report talks about 'physical literacy' instead of 'sport' as the former is considered to be a right in the leading sporting nations of the world.
- It recommends directing all school boards to ensure that from the coming academic year i.e. 2022-23 at-least at least 90 minutes of every school day will be dedicated to free play and games.
- The report also suggest that from the current academic year all non-residential colleges and schools should compulsorily allow access during non-working hours to neighbourhood children to use their playgrounds and sports facilities for free, subject to basic norms of identification, security and care.
- It has also suggested that 180 days time should be given to educational institutions, which hosts students for more than 10 hours a week, to publish and disseminate to parents/guardians a 'Physical Literacy Policy' and create an internal committee to address specific cases where there is a failure in responsibilities to deliver the right to physical literacy of students.
- This report has asked for the formation of empowered committee of senior officers from key ministries and independent experts from the fields of education, health, disability, sports, and movement.

- This committee could be headed by a court-appointed convenor, who would provide regular reports to the court.
- It shall also be the duty of this committee to actualise sport as fundamental right.
- The report has asked the Court to direct Ministry of Electronics and Information Technology to create a dashboard with real time data on mapping of available playgrounds and open spaces and their utilization rates, availability and qualifications of physical education teachers, curricula, timetables, and equipment in educational institutions across the country.

Initiatives by Government of India to promote sports:

● **Khelo India Initiative:**

- ▶ The Khelo India programme has been introduced to revive the sports culture in India at the grass-root level by building a strong framework for all sports played in our country and establish India as a great sporting nation.
- ▶ Talented players identified in priority sports disciplines at various levels by the High-Powered Committee will be provided annual financial assistance of INR 5 lakh per annum for 8 years.

Target Olympic Podium Scheme (TOPS):

- It was formulated in 2014 with the aim to identify, groom and prepare potential medal prospects for Olympics.

CAN AADHAR DATA BE SHARED FOR THE PURPOSE OF CRIMINAL LAW ENFORCEMENT?

CONTEXT:

- Aadhar data cannot be the source of identification of any criminal case inquiry, according to the UIDAI.
- The Delhi High court has asked police to use the Aadhar details for matching the criminal fingerprints for identifying the culprit.

Overview

- What is the plea of the Delhi High Court?
- What is the present case about?
- Data UIDAI collects
 - ▶ Demographic information includes
 - ▶ Biometric information includes 10 fingerprints
- Is Confidentiality of data guaranteed under the Aadhaar Act?
- Judicial Backing

What is the plea of the Delhi High Court?

- Delhi Police approached Delhi High Court under Section 33(1) of the 'Aadhaar Act'.
- This provision of the above Act allows a judge of a High Court to order the disclosure of information on identity in certain cases.

About UIDAI

- The UIDAI, which issues the unique Aadhaar number to residents of India, is prohibited by law from sharing any core biometric information with police.
- UIDAI is the authority that collects demographic and biometric information of residents at site.

What is the present case is about?

- The police recovered 14 chance prints from the spot and footage from CCTV cameras in the area showing one of the suspects.
- The chance impressions and pictures did not match with any of the data already available with the police.
- Investigators now want to cast the net wider, using Aadhaar's biometric database

What Aadhar card contains?

- Aadhar is a 12-digit unique identity number that can be obtained voluntarily by the citizens of India and resident foreign

- nationals who have spent over 182 days in twelvemonths immediately preceding the date of application for enrolment, based on their biometric and demographic data.
- Name, Address, Date of birth, Gender, Mobile phone number, Email address is mentioned in Aadhar card of a person with his/her biometric details including
 - ▶ The fingerprints
 - ▶ iris scans
 - ▶ The resident's photograph

Is Confidentiality of data guaranteed under the Aadhaar Act?

- The Aadhaar Act requires the UIDAI to ensure confidentiality and security of the identity information it collects.
- The UIDAI has also said that no Aadhaar data can be shared by any individual or entity with anyone without the consent of the resident or holder of the Aadhaar.
- Section 33, the provision under which Delhi Police has approached the court, allows the disclosure of only identification information including photograph or authentication records, but no core biometric information.
- Also, this provision states that the court cannot pass any order in such matter "without giving an opportunity of hearing to the UIDAI".
- On September 26th 2018, the Supreme Court delivered its judgment. It upheld the Aadhaar Act as constitutionally valid.

Judicial backing

- It ruled that the Act empowers disenfranchised sections of society by providing them better access to fundamental entitlements, such as State subsidies.
- The Court held that the Act was competently passed by Parliament, even though it was passed as a Money Bill.
- The Court held that the Act does not violate the fundamental rights guaranteed under Articles 14, 15, 19 and 21.

COOLING OFF PERIOD AND ITS NEED IN CIVIL SERVICES

CONTEXT:

- The cooling off period before joining post-retirement job is necessary for increasing the accountability and efficiency of the person after years of continuous services.

Overview

- What is the cooling-off period?
- What does “post-retirement commercial employment” mean?
 - ▶ What does Expression covers?
- When does a government allow or turn down such requests from pensioners?
- What about government servants joining politics after retirement?

What is the cooling-off period?

- Cooling-off period is the length of time for which a retired civil servant is prohibited from accepting commercial employment.
- Post-retirement commercial employment for the three All India Services (IAS, Indian Police Service, and Indian Forest Service) is covered under the AIS Death-cum-Benefits Rules, and for the Central Civil Services under the CCS (Pension) Rules.
 - ▶ **Rule 26 of the AIS Death-cum-Benefits Rules** similarly restricts a pensioner from commercial employment for one year after retirement, except with government sanction.
 - ▶ **Rule 9 of the CCS (Pension) Rules** states that “if a pensioner who, immediately before his retirement was a member of Central Service Group ‘A’ wishes to accept any commercial employment before the expiry of one year from the date of his retirement, he shall obtain the previous sanction of the Government to such acceptance”.

The cooling-off period was two years until January 2007, when the government reduced it to one year by an amendment.

- Non-compliance with these rules can lead to the government declaring that the employee “shall not be entitled to the whole or such part of the pension and for such period as may be specified”.

What does “post-retirement commercial employment” mean?

• The expression covers:

- ▶ Employment in any capacity including that of an agent, under a company, co-operative society, firm or individual engaged in trading or business but this does not include employment under a body corporate, wholly or substantially owned or controlled by the Central Government or a State Government
- ▶ Setting up practice, either independently or as a partner of a firm, as adviser or consultant in certain matters specified under the rules, including matters that are relatable to the pensioner’s official knowledge or experience.

When does a government allow or turn down such requests from pensioners?

The CCS (Pension) Rules specify several factors for the government to consider while granting or refusing permission,

These include:

- Whether a “no-objection” for the proposed employment has been obtained from the cadre controlling authority and from the office where the officer retired;
- Whether the officer has been privy to sensitive or strategic information in the last three years of service that is directly related to the work of the organisation he proposes to join;
- Whether there is conflict of interest between the policies of the office he has held in the last three years and the interests/work of this organisation;
- Whether this organisation has been in conflict with or prejudicial to India’s foreign relations, national security and domestic harmony; and
- Whether the organisation he proposes to join is undertaking any activity for intelligence gathering.

According to these rules, “**conflict of interest**” does not include normal economic competition with the government or its undertakings”.

What about government servants joining politics after retirement?

- While in service, the Conduct Rules bar government servants from being associated with any political

party or organisation, and from taking part in or assisting any political activity.

- There is no rule, however, to stop government servants from joining politics after retirement.

INCREASING INCIDENTS OF MOB-LYNCHING

CONTEXT:

- ▣ The recent death incident of two tribal men in Madhya Pradesh due to beating received by them on suspicion of cow slaughtering has caused a question on Fundamental rights and ambit of cow slaughter laws in India.

Overview

- What is Mob Lynching?
- Why is it considered to be bad for a country like India?
- What is the position of Indian Judiciary on Anti-Cow Slaughter Bills?
- What is the Way Forward?

What is Mob Lynching?

- It is a form of violence in which a mob, under the pretext of administering justice without trial, executes a presumed offender, often after inflicting torture and corporal mutilation.
- The term lynch law refers to a self-constituted court that imposes sentence on a person without due process of law.

Why is it considered to be bad for a country like India?

- The incidences of cow lynching have stigmatised communities such as Dalits, Muslims and tribals for their dietary habits and their dependence on cattle products for a livelihood.
- It has been seen that the brunt of the mob violence has been mostly being borne by Muslims, Dalits and Tribal.
- In such cases the reaction of law enforcement agencies has also being called into question.

- It has also been observed that those getting involved in mob lynching go scot free while those involved in supposed cow slaughter are arrested.
- Anti-cattle slaughter laws therefore are seen an expression of majoritarian will rather than a step toward animal protection.

What is the position of Indian Judiciary on Anti-Cow Slaughter Bills?

- Relying on the provisions of **Articles 48, 48A and 51(A) of the Directive Principles of State Policy of the Indian Constitution**, the Supreme Court of India has justified total ban on cattle slaughter.
- The above provisions seek to preserve breeds of cattle used in agriculture and animal husbandry.
- These provisions also identify promotion of animal husbandry to be an important Constitutional goal.

What is the Way Forward?

- The police should actively take action against the persons having alleged in mob lynching.
- At this point of time four States i.e. Rajasthan, Jharkhand, West Bengal and Manipur, have passed laws against lynching.
- It is important for the society to realise that mob lynching has no place in democratic country like India and even if cow slaughter is a crime, punishment for the same shall be ordered by the Court of Law.

DELIMITATION COMMISSION CHANGES THE ELECTORAL MAP OF JAMMU & KASHMIR

CONTEXT:

- The Jammu & Kashmir Delimitations Commission has finalized its report in which it has recommended increase in the total number of seats in the Legislative Assembly of the Union Territory of Jammu & Kashmir.

Overview

- Context
- What is Delimitation Commission?
- About the Jammu & Kashmir Delimitations Commission
- Why has the Commission's decision received criticism?
- What are the other important recommendations of the Commission?

What is the Delimitation Commission?

- The Delimitation commission or Boundary commission of India is a commission established by the Government of India under the provisions of the Delimitation Commission Act.
- The main task of the commission is redrawing the boundaries of the various assembly and Lok Sabha constituencies based on a recent census.
- The representation from each State is not changed during this exercise. However, the number of SC and ST seats in a state are changed in accordance with the census.
- The present delimitation of constituencies has been done on the basis of 2001 census under the provisions of Delimitation Act, 2002.
- The Commission's orders cannot be challenged in any court of law.

About the Jammu & Kashmir Delimitations Commission:

- It is a 3 member Commission headed by retired **Supreme Court Judge Ranjana Desai**.
- Its main function was to look into reorganization of Assembly and Lok Sabha seats in the Union Territory of Jammu & Kashmir in such a way that the people in different parts of the UT get equitable representation.

What are the important take away from the report of Delimitations Commission?

- Increasing the total number of seats in the UT to 90 from 83 earlier.
- This will increase the number of seats in the Jammu Division to 43 from 37 seats earlier, and that in the Kashmir Valley to 47 from 46 earlier.
- Reorganisation of the Parliamentary constituencies such that the five Lok Sabha seats now are made up of exactly 18 Assembly constituencies each, taking the total number to 90,
- Reservation of nine Assembly seats for Scheduled Tribes – six in Jammu and three in Kashmir, and Removal of the regional distinction between Jammu and Kashmir and treating it as one, as is reflected in the combining of Anantnag region in Kashmir with Rajouri and Poonch in Jammu to carve out Anantnag-Rajouri as a Parliamentary constituency.

Why has the Commission's decision received criticism?

- The panel's decisions are politically significant and have met with criticism amongst mainstream parties in the Valley.
- The Jammu region has got more seats relative to its population compared with the Kashmir Valley, and this violates the population criterion, is a key contention of these parties.
- The award of seats based on the 2011 census has meant that Jammu with 44 per cent population will get 48 per cent share in seats, while Kashmir with 56 per cent of population will get only 52 per cent share in seats.
- Earlier, the Kashmir region had 55.4 per cent share in seats and Jammu 44.5 per cent share in seats.
- Further it is also alleged that, the new Assembly seats in the Jammu region have been carved out mostly in Hindu dominated areas; the only seat in the Valley that has been carved out is in frontier Kupwara district.

What are the other important recommendations of the Commission?

- The panel has also recommended that the Legislative Assembly of the Union Territory have at

least two members – one of them a woman – from the Kashmiri migrant community with the right to vote at par with nominated members like in the Puducherry Assembly.

- Besides, it also recommended some representation to Persons displaced from Pakistan-occupied Jammu and Kashmir.
- The delimitation order said that names of Assembly constituencies have been changed keeping in view the demand of local representatives.
- Names of the changed constituencies are as follows:

- ▶ Tangmarg has been renamed Gulmarg
- ▶ Zoonimar is Zaidibal
- ▶ Sonwar is now Lal Chowk
- ▶ Padder is Padder-Nagseni
- ▶ Kathua North is Jasrota
- ▶ Kathua South is Kathua
- ▶ Khour is Chhamb
- ▶ Mahore is Gulabgharh
- ▶ Darhal is Budhal

INTER-STATE ARRESTS: A MESSY AFFAIR

CONTEXT:

- Inter-state arrest procedures of police came into question after the arrest and subsequent release of Tajinder Pal Singh Bagga.

Overview

- Context
- Background
- What are the Constitutional Provisions with respect to Police Jurisdiction?
- What has been the Observation of Supreme Court on this issue?
- What are inter-state arrest procedures?
- The guidelines proposed

◎ BACKGROUND:

- Delhi BJP leader Tajinder Pal Singh Bagga was arrested from his home by the Punjab Police.
- The Punjab Police team though was stopped while en-route to their state by the Haryana Police.
- Tajinder Pal Singh Bagga was though later brought back to his home by Delhi Police.
- This incident has sparked row over **police jurisdiction and inter-state police cooperation**.

What are the Constitutional Provisions with respect to 'Police Jurisdiction'?

- Entry 2, List II of the Seventh Schedule** of the Indian Constitution puts 'Police' in the State list, implying that all matters relating to police will be adjudicated upon by the state government.
- Thus, it can be inferred that the police comes directly under the control of the state government and that the jurisdiction of the police is limited to the area inside its state boundary.

In Punjab, the Aam Aadmi Party (AAP) has full control of the police, while in Haryana, the power is held by Bharatiya Janata Party (BJP).

And in the case of Delhi, the police comes under the control of the Union Home Ministry even though the government is led by the AAP.

- Rival parties in power in different states therefore can sometimes come in the way of mutual cooperation between police forces, hampering a fair and proper investigation.

- The ramifications of such a politically-driven process are nothing but a challenge to fairness and equality.
- Rather than becoming a topic of justice, the matter turns into the topic of political rivalry.
- An absence of cooperation amongst state police makes the goal of attaining justice a far-fetched one.

What has been the observation of Supreme Court on this issue?

- Even the Supreme Court acknowledges that political interference is acting as an impediment to a fair investigation.
- Additionally, the Second Administrative Reforms Commission in 2007 also mentioned that increasing political interference has taken a toll on its accountability and the politicians are using the police for personal or political reasons.

What are inter-state arrest procedures?

- While Section 41 to 60 of the Criminal Procedure Code gives the police prerogative to arrest, Section 78 to 81 of CrPC provides for arrest procedure outside the jurisdiction of particular place.
- Despite having an established methodology its implementation has remained toothless.
- There have been instances where the police of one state arrest a person from another without informing the local police and the court has objected to the same by directing the police to revisit the rules to ensure that rights of the people are not under threat.
- The Delhi High Court had appointed a two member committee to look into inter-state arrest procedures.
- The panel, comprising retired High Court Judge, S. P. Garg and IPS Officer Kanwaljeet Deol have given **detailed suggestions** based, inter alia, on Sections 48, 77, 79 and 80 of the Code of Criminal Procedure.

The guidelines proposed include:

- Primary procedure to be followed by police officer are as follows-**
 - The police officer must seek prior permission

of superior officers in writing or on phone to go out of state/UT to carry out investigation.

- ▶ In a case when the police officer decides to effect an arrest, he must set out the facts and record reasons in writing.
- ▶ He should move the Jurisdictional Magistrate to seek arrest/search warrants under section 78 and 79 CrPC except in emergent cases when the time taken is likely to result in escape of the accused or disappearance of incriminating evidence or the procurement of arrest/search warrant would defeat the purpose.
- ▶ Before proceeding outside the State, the police officer must make a comprehensive departure entry in the Daily Diary of his police station.
- ▶ If the possible arrestee is a female, a lady police officer be made part of the team.
- ▶ The police officer should take their identity cards with them. All police officers in the team should be in uniform; bear accurate, visible and clear identification.
- ▶ Before visiting the other State, the police officer must endeavor to establish contact with the local police station in whose jurisdiction he is to conduct the investigation.
- ▶ He must carry with him the translated copies of the Complaint/FIR and other documents in the language of the State which he intends to visit.
- ▶ After reaching the spot of investigation, search, if any should be strictly conducted in compliance of the procedure laid down under Section 100 of CrPC.
- ▶ In case of arrest, the police officer must follow the procedure under Section 41A and 41B and Section 50 and 51 of CrPC.
- ▶ The process of arrest carried out by the police must be in compliance with the guidelines given in D. K. Basu case and provisions of CrPC.
- ▶ The arrested person must be given an opportunity to consult his lawyer before he is taken out of State.
- ▶ While returning, the police officer must visit the local police station and cause an entry to be made in the Daily Diary specifying the name

and address of the person(s) being taken out of the State; articles if any, recovered.

- ▶ On arrival at the police station, the police officer must make an arrival entry in the record and indicate the investigation carried out by him, the person arrested and the articles recovered.
- ▶ The superior police officer shall personally supervise such investigation.
- ▶ Endeavour should be made to obtain transit remand after producing the arrestee before the nearest Magistrate unless exigencies of the situation warrant otherwise and the person can be produced before the Magistrate having jurisdiction of the case without infringing the mandate of Sections 56 and 57 of CrPC with 24 hours.

Other Directions:

- Since the arrestee is to be taken out of his State to a place away where he may not have any acquaintance, he may be permitted to take along with him, his family member/acquaintance to remain with him till he is produced before the jurisdictional Magistrate.
- Such family member would be able to arrange legal assistance for him.
- The arrested person must be produced before the jurisdictional Magistrate at the earliest, in any case, not beyond 24 hours from the date of arrest excluding the journey time so that arrest of such person and his detention, if necessary, may be justified by judicial order.
- The 24 hours period prescribed u/s 57 CrPC is the outer post limit beyond which a person cannot be detained in police custody.

Guidelines for when it is not feasible to inform the local police in advance-

- In case of urgency or other considerations in the interest of investigation, it is not found feasible to inform the police station encompassing the jurisdiction of search, seizure, arrest or investigation before the event, this should be done soon after the search, seizure, arrest etc. has been conducted.
- In all cases a diary entry should mandatorily be made in the police station of jurisdiction.

HOW NUTRIENT-DEFICIENT ARE INDIAN SOILS?

CONTEXT:

- According to a recent Centre for Science and Environment (CSE) report 'The State of Biofertilizers and Organic Fertilizers in India', about 85% of soil samples are deficient in organic carbon.
- The levels of organic carbon and macronutrients in Indian soils are either "very low", "low" or "medium".

Overview

- Deciding factors of soil fertility
- Significance of soil
- Factors responsible for poor quality of soil
- Required measures
- Important Government Schemes

Key-highlights of the Report

- Organic deficiency:** 85% of soil samples are deficient in organic carbon. Of the total sample, about 15% contain very low levels of organic carbon, 49% contain low levels of organic carbon and 21% contain medium levels of organic carbon
 - Organic carbon deficiency** is widespread across the country—24 states and Union Territories (UTs) have, at least, half of their soil samples deficient in organic carbon.
 - Out of these, seven states have more than 90% deficient samples.
 - Haryana's soils are the most deficient in organic carbon, followed by those of Punjab, Uttar Pradesh, Rajasthan, Tamil Nadu, Mizoram, and Andaman and Nicobar Islands.

Soil organic matter content is an indicator of soil health, and it is about 2.5% to 3.0 % by weight in the root zone (top 20 cm)

- Nitrogen deficiency:** Similarly, 97% of the samples are deficient in nitrogen—out of these, 45% of the samples show very low levels of nitrogen, 36% low levels of nitrogen and 16% medium levels of nitrogen
 - 32 states and UTs have nitrogen deficiency in at least, half of their soil samples.
 - Of these, 27 states and UTs have more than 90% deficient samples.
 - Fifteen states and UTs have nitrogen deficiency in almost all of their samples—Andaman and Nicobar Islands, Dadar and Nagar Haveli,

Daman and Diu, Bihar, Delhi, Haryana, Kerala, Madhya Pradesh, Manipur, Mizoram, Odisha, Puducherry, Rajasthan, Tamil Nadu, Uttarakhand and Uttar Pradesh.

- Phosphorus deficiency:** The report found that 83% of the samples are deficient in phosphorus—17% reveal very low levels of phosphorus, 31% reveal low levels and 35% medium levels.
- Potassium deficiency:** About 71% of the samples are deficient in potassium. Of these samples, about 5% have very low levels of potassium, 14% low levels and 52% medium levels.
- Other deficiencies (micronutrient):** Indian soils are also deficient in micronutrients with more samples showing deficit in **boron, iron, sulphur and zinc and a lesser number in copper and manganese.**

What decides soil's fertility?

- Soil is a complex mixture of **minerals, water, air, organic matter, and countless organisms**—all of which come together to form a **fertile substance** that can grow and nourish saplings.
- These microorganisms provide essential **nutrients** for crop plant growth such as **nitrogen, phosphorus, sulphur, potassium, calcium, magnesium and micronutrients.**
- Soil fertility is also greatly dependent on biological components of soil like bacteria, fungi, or algae.
- The presence of diverse soil microbes protects the plant from harmful pathogens. Moreover, the presence of rich microorganism enhances the fertility of the soil, and therefore, gives out better yield.

Soil Health Card (SHC) Scheme

- Soil Health Card (SHC) is a Government of India's scheme promoted by the Department of Agriculture & Co-operation under the Ministry of Agriculture and Farmers' Welfare.
- Initiated in 2014-15, the scheme is being implemented through the Department of Agriculture of all the State and Union Territory Governments.

Why soil is essential?

- **Ecosystem service:** Soil provides ecosystem services critical for life: soil acts as a water filter and a growing medium; provides habitat for billions of organisms, contributing to biodiversity; and supplies most of the antibiotics used to fight diseases.
- **Food security:** For healthy food production, soil health is essential. It provides essential nutrients, water, oxygen, and root support, all of which aid plant growth and development for food production.
- **Home for biodiversity:** Soils are habitats for beneficial soil microbes; these organisms are nature's hidden helpers.
- **To combat climate change:** Soil is known as carbon sequester, and therefore, it can help combat climate change. It is estimated that the soil can store about 2,500 gigatons of carbon.

Soil is known to hold 1/4th (25%) of the planet's biodiversity.

What is killing soil?

- **Farming practices** such as tilling break up the soil and destroy its natural structure, killing many of the vital bacteria.
- **Agricultural chemicals** can alter the physiological, metabolic and biochemical behaviour of microbiota in the soil. This can disrupt the relationships between plants and microbes, decreasing nutrient bioavailability.
- **Pressures of population growth,** food insecurity and agricultural intensification are leading to widespread soil degradation. This degradation can take many forms.
 - ▶ Soil degradation
 - ▶ Soil erosion
 - ▶ Soil Acidification
 - ▶ Soil Salinization
- **Burning of crop residues**
- **Land misuse and soil mismanagement**
- **Climate change**

What can save the soil?

- **Replenishment**
- **Organic practice:** Recycling of organic matter or biomass can be done through the application of organic fertilisers and practices like growing **green manure crops** or mulching. Some other practices that help regain nutrients include:

- ▶ **inter-cropping**
- ▶ **mixed cropping**
- ▶ **Practicing crop rotation** allows different plants to grow in an area of soil every year. This allows the soil to replenish itself of nutrients that are lacking after the growth of one type of plant.
- **Agroforestry** involves growing crops around trees and other plants such as hedges.
- **Permaculture** is a form of sustainable farming that respects nature and its design
- **Biofertilizers**

Green manure crops

- The state of Punjab is promoting the cultivation of green manure by providing subsidies.
- Green manures are crops grown specifically for maintaining soil fertility and structure.
- They are normally incorporated back into the soil, either directly, or after removal and composting.
- There are three main varieties of green manure, including Dhaincha, Cowpea, Sunhemp.

Fertilizer Consumption in India

- In 2019, India was the second highest producer and consumer of chemical fertilizers in the world.
- **Chemical fertilizer consumption:** In 2020–21, the chemical fertilizer consumption in India, excluding single super phosphate (SSP), was 62.98 million tonne, with a growth of more than 82.5 per cent since 2000–01.
- **Carrier-based solid bio-fertilizers:** In 2020–21, India produced about 1,34,323 tonne of carrier-based solid bio-fertilizers.
- **Liquid bio-fertilizers:** In 2020–21, the total production of liquid bio-fertilizers in India was about 26,442 kilolitre (kl). This marked a growth of about 552 per cent over the 2014–15 figures.

- Communities, farmers and corporations can be educated about sustainable practices to promote respect and responsibility for nature and reduce their carbon footprint.

Every year, December 5 is celebrated as World Soil Day to raise awareness on the importance of healthy soil and promote the sustainable management of soil resources.

Government Interventions

- Pradhan Mantri Fasal Bima Yojana (PMFBY)
- Soil Health Card Scheme
- Soil Health Management Scheme
- Pradhan Mantri Krishi Sinchayee Yojna (PKSY)
- Per Drop More Crop
- India is signatory to achieving Land Degradation Neutrality by 2030.

'Save Soil' Campaign

- Sadhguru, the founder of Isha Foundation, is currently on a 100-day solo motorcycle journey through Europe, Central Asia, and the Middle East as part of the 'Save Soil' initiative.

◎ CONCLUDING THOUGHTS

- The dirt beneath our feet is getting poorer and on many farms worldwide, there is less and less of it. And if nothing is done to increase microbial activity in the soil in the next 10 years, there may be no going back. And not just would the lives of future generations be at peril, but it could also lead to unimaginable food shortages.
- And it must be done urgently, for the clock is ticking on India's soil health.

MINE E-WASTE, NOT THE EARTH

CONTEXT:

- According to scientists, the recycling of e-waste must urgently be ramped up because mining the Earth for precious metals to make new gadgets is unsustainable.

What is E-Waste?

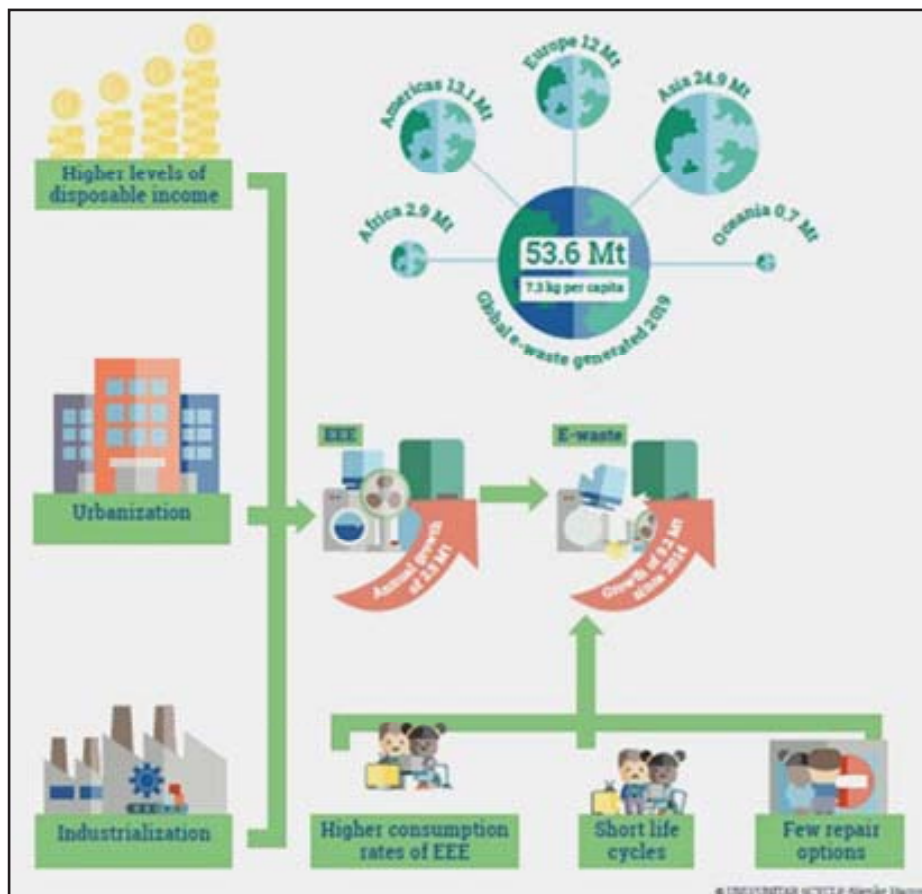
- E-Waste is short for Electronic-Waste and the term is used to describe old, end-of-life or discarded electronic appliances. It includes their components, consumables, parts and spares.
- It is categorised into 21 types under two broad categories:
 - Information technology and communication equipment.
 - Consumer electrical and electronics.
- Laws to manage e-waste have been in place in India since 2011, mandating that only authorised dismantlers and recyclers collect e-waste. E-waste (Management) Rules, 2016 was enacted in 2017.
- India's first e-waste clinic for segregating, processing and disposal of waste from household and commercial units has been set-up in Bhopal, Madhya Pradesh.

Recent estimates:

- The "mountain" of waste electronic and electrical equipment discarded in 2021 will weigh more than 57 million tonnes.
- This is heavier than the Great Wall of China - the planet's heaviest artificial object.
- Globally, the amount of so called e-waste generation is growing by two million tonnes every year.
- It is estimated that less than 20% is collected and recycled.

Growing demand:

- Geopolitical unrest, including the war in Ukraine, has caused huge spikes in the price of materials like nickel, a key element in electric vehicle batteries.
- Volatility in the market for elements is causing "chaos in supply chains" that enables the



production of electronics.

- Combined with the surge in demand, this caused the price of **lithium** - another important component in battery technology - to increase by almost 500% between 2021 and 2022.

Elements in smartphones that could run out in the next century:

- **Gallium:** Used in medical thermometers, LEDs, solar panels, telescopes and has possible anti-cancer properties
- **Arsenic:** Used in fireworks, as a wood preserver
- **Silver:** Used in mirrors, reactive lenses that darken in sunlight, antibacterial clothing and gloves for use with touch-screens
- **Indium:** Used in transistors, microchips, fire-sprinkler systems, as a coating for ball-bearings in

Formula One cars and solar panels

- **Yttrium:** Used in white LED lights, camera lenses and can be used to treat some cancers
- **Tantalum:** Used in surgical implants, electrodes for neon lights, turbine blades, rocket nozzles and nose caps for supersonic aircraft, hearing aids and pacemakers

Doing the numbers

- A record 53.6 million metric tons of electronic waste were generated worldwide in 2019, up 21% in just five years.
- E-waste is also predicted to reach 74 million metric tons by 2030, almost doubling its actual figures in 15 years.
- This makes e-waste the fastest-growing domestic waste stream on a global scale.

INTERNATIONAL CONFERENCE ON DISASTER RESILIENT INFRASTRUCTURE (ICDRI)

CONTEXT:

- Recently, the Prime Minister addressed the inaugural session of 4th edition of International Conference on Disaster Resilient Infrastructure (ICDRI) through video conference.

◎ BACKGROUND

- Disasters triggered by natural hazards threaten the long-term sustainability of development in Asia and the Pacific.
- Countries across the region face significant disaster and climate risk.
 - From 2012 to 2021 alone, infrastructure failure due to insufficient resilience contributed to about 80,729 disaster-related fatalities.
- Infrastructure, homes, and businesses were damaged, with indirect economic and social consequences for jobs, productivity, and service provision.
- The escalation in disaster losses underscores the urgency of addressing disaster risk adequately when planning and designing infrastructure in developing member countries (DMCs) of the Asian Development Bank (ADB).

Disasters in India

- India is one of the world's most disaster-prone countries, as it is exposed to many natural hazards including floods, cyclones, droughts, and earthquakes.
- India started reorganizing its domestic DM system after a succession of major disasters, including the 1999 Super Cyclone Odisha (formerly known as Orissa), 2001 Gujarat earthquake, and 2004 Indian Ocean tsunami.
- The aftermath of these devastating disasters led India to enact the DM Act in 2005, adopt the National Policy on DM in 2009, and develop the National DM Plan in 2016.

◎ ANALYSIS

What is 'Infrastructure Resilience'?

- Infrastructure resilience is the ability of infrastructure systems to resist, absorb, accommodate, and recover from hazards to which they are exposed—and to mitigate the impact of such events on the users served by the systems.

- Resilience is a property of infrastructure systems that includes not only the performance of individual assets but also their collective role in providing essential services to users.

What are the benefits of disaster resilience investment?

- The avoidance of damage and loss
- reduce damage to infrastructure and other strategic assets
- reduce economic losses and disruptions
- Reduced risks can unlock economic development
- Motivating long-term planning by reducing the risk of disruptive disaster impact across longer time horizons
- In many instances, interventions made to improve resilience also generate co-benefits, for example, improvements in gender equality or enhancements in natural capital.

What is the need to focus towards managing disasters?

- Disaster risks are set to increase further over the coming years and decades, as both climate and population patterns change.
- According to the **Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)**, heavy precipitation events are very likely to intensify and become more frequent with increased global warming (IPCC 2021).
- Similarly, the risk from other hazards, including tropical cyclones and coastal flooding, is expected to increase as temperatures continue to rise.
- In addition to this increased risk of acute disasters, climate change is projected to cause significant long-term stresses from chronic hazards, such as rising sea levels, heat waves, and drought.
- Sea level rise is particularly relevant to many low-lying islands in the Pacific, as well as to Asian coastal regions.
- Insufficiently risk-informed development, unplanned urbanization, and population growth, resulting in an increase in the number of people

and the value of economic activity in hazard-exposed areas, will further heighten the risks from disasters.

What measures are required?

- Effective investment in resilient infrastructure can support wider social and economic resilience.
- Reliable infrastructure services can greatly reduce the impact of disasters on economies and communities, supporting relief and recovery efforts and the provision of essential services to vulnerable groups.

International Conference on Disaster Resilient Infrastructure (ICDRI):

- The International Conference on Disaster Resilient Infrastructure (ICDRI) is the **annual conference** of the Coalition for Disaster Resilient Infrastructure (CDRI).
- It brings together member countries, organizations and institutions **to strengthen the global discourse on disaster and climate resilient infrastructure.**
- In 2018 and 2019, the first and second International Workshop on Disaster Resilient Infrastructure took place in New Delhi, India. ICDRI 2021 was hosted virtually.
- The fourth edition of ICDRI is being organized in **partnership with the United States Government.**

ICDRI2022:

- ICDRI2022 will engage with decision-makers, practitioners and communities from across the world to discuss challenges, identify good practices, develop collaboration and galvanize concrete actions.
- It will include multi-sectoral and multi-country discussions around infrastructure transitions, risk governance and finance, innovation and human-centered, ecologically sensitive design for building resilience.

Coalition for Disaster Resilient Infrastructure (CDRI):

- India initiated CDRI as a global partnership of 27 countries in 2019.
- It launched a programme to help small island states develop resilience to climate crisis at the 2021 UN Climate Change Conference (COP26) in

Glasgow in November.

- The Coalition for Disaster Resilient Infrastructure (CDRI) is a **partnership of national governments, UN agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and knowledge institutions.**
- It aims to promote the **resilience of new and existing infrastructure systems** to climate and disaster risks in support of sustainable development.
- CDRI promotes **rapid development of resilient infrastructure** to respond to the **Sustainable Development Goals'** imperatives of expanding universal access to basic services, enabling prosperity and decent work.
- The following are CDRI's strategic priorities:
 - ▶ **Technical Support and Capacity-building:** This includes disaster response and recovery support; innovation, institutional and community capacity-building assistance; and standards and certification.
 - ▶ **Research and Knowledge Management:** This includes collaborative research; global flagship reports; and a global database of infrastructure and sector resilience.
 - ▶ **Advocacy and Partnerships:** This includes global events and initiatives; marketplace of knowledge financing and implementation agencies; and dissemination of knowledge products.
- The CDRI **Secretariat is based in New Delhi, India.**
- Members: 30 nations and 8 organisations.
- Since 2015, the international community's commitment to advancing disaster-resilient infrastructure has been reflected in
 - ▶ **Sustainable Development Goal 9** (build resilient infrastructure, promote sustainable industrialization, and foster innovation)
 - ▶ global target D of the **Sendai Framework for Disaster Risk Reduction** (substantially reduce disaster damage to critical infrastructure and disruption of basic services)
 - ▶ Principles for Quality Infrastructure Investment of the **Group of Twenty (G20)** countries, among others.

OPEN SOURCE TECHNOLOGY

CONTEXT:

- ❑ In the process of democratization of governance structure, new emerging technologies play a vital role.
- ❑ Digital public goods (DPGs) and digital public infrastructure (DPI) are prime examples of technological investments into 'open' tech that can help governments more quickly develop solutions to big and urgent challenges.

Overview

- Openness of Technology
- Digital public goods
- Digital public Infrastructures
- Significance for India
- Way forward

- One example of a DPI is **OpenG2P**, which digitized cash transfers and was built during the West Africa Ebola crisis.

What is meant by 'Openness' in technology?

- Openness of technology refers to free availability of the source code to every user or developer for usage, modification and redistribution.
- Both Digital public goods (DPGs) and digital public infrastructure (DPI) are anchored in the idea of "openness" and open-source, i.e. each problem has to be solved only once.
- The solution is made freely and widely available to anyone who wishes to use it, modify it or built upon it.
- These are accessible and available to anyone who wishes to use them, modify them or build upon it.

Digital public goods (DPGs)

- DPGs are "open source software, open data, open AI models, open standards and open content that adhere to privacy and other applicable laws and best practices, do no harm and help attain the SDGs,".
- One example of a DPG is **DIVOC**, a programme that has been customized by governments to generate over 1 billion secure and verifiable vaccination certificates in India, Sri Lanka, Philippines, Jamaica and Indonesia.

Digital public infrastructure (DPI)

- DPIs refer to societal scale digital systems with functions essential for public and private service delivery, including payment systems and data exchanges.

What are the benefits of open source technology that India can derive?

- **Free availability and accessibility:** As compared to proprietary software open source doesn't have any vendor lock-in, i.e., no fee is charged for the use and modification of the technology.
- **A community for developers:** Any successful project would have a thriving community of developers to build suitable target-oriented software, open-source software provides the platform to the desired developers.
- **Secure software:** Open source technology and software are vulnerable to the security breach, when such vulnerability is reported the team of developers gets the upper hand to resolve the issue, which makes it more secure and safe.
- **Governance structure:** Digital Public Goods and Digital Public infrastructure along with community engagement has the potential to democratize the governance structure of the nation. More accountable and responsive governance.
- **Networked health care:** Open source technology can bring a revolution in the health care sector in a geographically diversified country like India. Accessible and affordable healthcare services can be enabled for every citizen.
- **Quality education:** Emerging digital education can be fostered by open source technology.
- **Service ecosystem:** India is one of the largest service sector exporters in the world, availability of open source technology will help the Indian companies to hire developers and make their service route safer, secure and target-oriented.
- **Digitization of payment:** Open source technology has the potential capacity to be used in the digital India mission and make the payment system cashless.

Challenges in deployment and implementation

- Constraints in technical capability
- a persistent digital divide
- lack of fiscal space
- unintended exclusions
- Risks to data and digital rights of citizens

What are the major steps that need to be taken to implement the technological reform?

- **Moving from words to action:** To implement the process of Open source technology, accessible and affordable internet service plays a crucial role. The policy framers at the national and sub-national levels need to bridge the gap of the digital divide and penetrate the use of open source technology.
- **Building deeper country capacity:** Policy framers should focus on building up the infrastructure and

frameworks for secure cyberspace to support the growth and penetration of open source technology and software.

- **Leave no one behind:** The objective of the implementation plan needs to be inclusive and democratic, which involves people's participation and development for all.

◎ CONCLUSION:

Open source approaches to technologies can help the government more efficiently develop a tailored solution to big and urgent challenges. Implementing GPGs to leverage DPIs can provide crucial interventions for emergencies and development. DPGs and DPIs when combined with community engagement can make the governance structure more transparent and accountable. Some major challenges lie ahead in the implementation process of the technology which needs to be catered to achieve the Sustainable Development Goals' 2030.

WHAT DOES A WEAK RUPEE MEAN FOR THE ECONOMY?

CONTEXT:

For the first time, the Indian rupee breached the barrier of 77 against the dollar to close at a record low of 77.46, raising fears that India's inflation situation could worsen.

- Every 5% fall in the rupee adds about 10-15 bps to the inflation.



What is a rupee?

- The word "rupee" is derived from a Sanskrit word "rūpya", which means "wrought silver", and maybe also something stamped with an image or a coin.
- As an adjective it means "shapely", with a more specific meaning of "stamped, impressed", whence "coin".

◎ BACKGROUND

- Indian currency began with devaluation in 1949 due to devaluation of Pound sterling (UK currency).
- However since India's trade was largely in Pound sterling (just after independence) it did not register much impact like the two major devaluations of the rupee: **In 1966 and 1991 in the face of economic crisis.**
- India started having the balance of payments problems since 1985, and by the end of 1990, it found itself in serious economic trouble.
- The government was close to default and its foreign exchange reserves had dried up to the point that India could barely finance three weeks' worth of imports.
- As in 1966, India faced **high inflation and large government budget deficits**. This led the government to devalue the rupee.
- In the period between **2000 and 2007**, the Rupee stopped declining and stabilised ranging between **1 \$ = Rs 44– Rs 48**.
- In **2016 saw the discontinuation of ₹500 and ₹1,000 notes due to the 2016 Indian bank note demonetisation** and consequently the introduction of new a ₹500 note, and a ₹2,000 note- a first for the currency.
- At present after pandemic situation is slowed down, the country is again facing the rupee depreciation, hence evident that depreciation of a currency is just not depends upon single factor, but can has many reasons behind its downfall.

◎ ANALYSIS

What is depreciation?

- Currency depreciation is a **fall in the value of a currency in a floating exchange** rate system.
- Rupee depreciation means that the **rupee has become less valuable with respect to the dollar**.
- It means that the rupee is now weaker than what it used to be earlier.
- **For example: USD 1 used to equal to Rs. 70, now USD 1 is equal to Rs. 77**, implying that the rupee has depreciated relative to the dollar i.e. it takes more rupees to purchase a dollar.

Depreciation Vs Devaluation

- If the value of the Indian Rupee is weakened through administrative action, it is **devaluation**.
- While the process is different for depreciation and devaluation, there is no difference in terms of impact.
- India used to follow the administered or fixed rate of exchange until 1993, when it moved to a market-determined process or floating exchange rate.
- China still adheres to the devaluation norms for increasing the value of their currency.

What are the reasons for current depreciation of rupee?

- **Sell-off of the Equity:**
 - ▶ A sell-off in the global equity markets which was triggered by the hike in interest rates by the U.S. Federal Reserve (central bank), the war in Europe and growth concerns in China due to the Covid-19 surge, led to the rupee depreciation.
 - ▶ Outflow of Dollar:
 - ▶ The outflow of dollars is a result of high crude prices and the correction in equity markets is also causing adverse flow of dollars.
- **Tightening of Monetary Policy:**
 - Steps taken by RBI to tighten the monetary policy to counter rising inflation had also led to depreciation.

What are the impacts of depreciation on Indian Economy?

- **Rise in Inflation:** It poses risk of imported inflation, and may make it difficult for the central bank to maintain interest rates at a record low for longer.
 - ▶ With higher landed prices of crude oil and other crucial imports, the economy is definitely inching towards cost-push inflation.
 - ▶ Cost-push inflation (also known as wage-push inflation) occurs when overall prices increase (inflation) due to increases in the cost of wages and raw materials.
- **More cost on imports:** India meets more than two-thirds of its domestic oil requirements through imports.
 - ▶ India is also one of the top importers of edible oils. A weaker currency will further escalate imported edible oil prices and lead to a higher food inflation
- **Lack of foreign exchange reserves:** The current account deficit is bound to widen, depleting foreign exchange reserves and weakening the rupee.
- Companies may not be allowed to fully pass on the burden of high costs to consumers, which, in turn, affect the government dividend earnings, raising questions about budgeted fiscal deficits.

Is Depreciation of Rupee beneficial too in some way?

- Depreciation in rupee is a double-edged sword for the Reserve Bank of India.
 - ▶ Weaker rupee should theoretically give a boost to India's exports, but in an environment of uncertainty and weak global demand, a fall in the external value of rupee may not translate into higher exports.
- **Indian market flooded with A grade goods:** the depreciation of rupee will make exports lesser and high quality Indian goods which were used to export for other countries will now be come to local markets.
 - ▶ **For ex:-** fresh fruits, spices, exotic vegetables and other products.

◎ CONCLUSION

The rupee was never equal to the dollar. At the time of independence, India's currency was pegged to pound sterling, and the exchange rate was a shilling and worked out to Rs 13.33 to the pound. The present situation requires stringent monetary policies for the government and RBI to implement to control the rising prices of basic commodities. Inflation and foreign trade accounts to India's major source for economy stabilization, and hence this is only targeted if the rupee depreciation will reduce.

ALL IS NOT WELL WITH GIG ECONOMY

CONTEXT:

- As the gig economy is expanding, there are rising concern regarding the status of gig workers under labour laws, lack of social security, ambiguity of rights, and vulnerability to fluctuation in demand.

Overview

- Analysis
 - What is Gig Economy?
 - Scope and prevalence of the gig economy
- Features of the gig economy
- Advantages of Gig Economy
- Disadvantages of Gig economy
- Gig Economy and Women
- How to improve the condition of Gig Workers?
- Conclusion

- Gig hubs in India:** Prevalence of gig economy is more in metro cities; with Delhi NCR at 43 percent emerging as the biggest hub, followed by Mumbai at 19 percent and Bangalore at 18 percent.
- Use of gig work platforms has grown by more than 30% in emerging economies.
- Only 20% of freelancers would prefer full-time employment.
- 40% of companies expect that gig workers will become an increasing part of their workforce.

Social Security Code, 2020

- The SS Code, for the first time, defines 'gig workers' and 'platform workers'.
- In this code, gig workers are classified as unorganised sector workers, although the security coverage is unclear.
- The central and state governments are required under section 109 of the law to "design and notify, from time to time, suitable assistance plans for unorganised workers".
- The national and state governments will predominantly fund social security measures, with the aggregator contributing a modest amount (1-2% of their yearly turnover).

◎ BACKGROUND

- As the pandemic disrupted the normal functioning of business leading to loss of jobs and income, the spread of the gig economy to provide some support is a welcome move.
- With the boom in the gig market, concerns related to merge income labour rights and status of employment is becoming a debatable issue.

◎ ANALYSIS

What is Gig Economy?

- A gig economy is a free market system in which temporary positions are common and organizations hire independent workers for short-term commitments.
- Non-traditional or gig work consists of income-earning activities outside of traditional, long-term employer-employee relationships.

Scope and prevalence of the gig economy:

- India constitutes about 40% of freelance jobs offered globally.
- According to a report on the future of jobs in India by FICCI, EY, and NASSCOM, with a 24% share, India is leading in terms of online labour market globally.

Features of the gig economy

- Based on temporary hiring:** In a gig economy, temporary, flexible jobs are commonplace and companies tend toward hiring independent contractors and freelancers instead of full-time employees.
- Technology dependent:** Technology facilitates work from home and Internet offers workers connectivity with employers and customers.
- Confined more to urban areas:** Gig economy is highly technologically dependent and as cities tend to have the most highly developed services, they are the most entrenched in the gig economy.
- Attracts young workers:** Gig economy attracts millennials because it offers them alternative work arrangements. It provides them with what they value:

- ▶ flexible working hours
- ▶ ability to work from home
- ▶ a variety of experiences
- ▶ a sense of excitement to be working on different projects with varied companies
- **Wide range:** The gig economy is prevalent in wide-ranging sectors/segments; Finance, agriculture and forestry, transportation, education, healthcare and construction.
- **Change of traditional roles:** Workers are taking upon themselves a much larger share of the market risk of economic ups and downs, changing trends, and fickle consumer preferences, which were traditionally borne by capitalist business owners who employed wage and salaried workers.

Advantages of the gig economy

- **Cater to immediate demand:** Gig economy can benefit workers, businesses, and consumers by making work more adaptable to the needs of the moment and the demand for flexible lifestyles.
- **Cheaper and more efficient:** Most times, employers cannot afford to hire full-time employees. In a gig economy, large numbers of people work part-time or in temporary positions.
- **Wider choice for employers:** Technology and connectivity through the internet don't require the freelancer to come into the office for work. Hence, employers have a wider range of applicants to choose from as they don't have to hire someone based on their proximity.
- **Offers specific expertise:** Professional services firms are hiring gig workers to add deep domain expertise to client-impact teams. Majority of professional services contact workers have years of domain-specific knowledge, like consultants.
- **Wider choice for employees:** People often find they need to move around or take multiple positions to afford the lifestyle they want. These days, people also tend to change careers many times throughout their lives; the gig economy is a reflection of this rising trend.
- **Youth economic productivity:** The gig economy offers the perfect platform for the engagement of youth in productive employment activities. It is also estimated that the gig economy offers relatively high gender parity in the workforce, as compared to traditional employment.

Disadvantages of the gig economy

- Erosion of traditional economic relationships

- Discourage Investment in Human Resources
- Crowding out traditional workers
- Disrupted work-life balance for gig workers
- No employment-related rights

Gig Economy and Women

• Advantages

- ▶ **Balancing Home and Work**
- ▶ **Safe Work Environment for Women**
- ▶ **Addressing Migration issue**
- ▶ **On-Demand Work**
- ▶ **Earning Extra Income**

• Disadvantages

- ▶ **Gender segregation of work**
- ▶ **Wage Disparities**
- ▶ **Dual burden:** On-demand work schedules do not allow women to reap the benefits of peak hours due to additional domestic and childcare responsibilities
- ▶ **Digital Divide:** The unequal access to digital technologies acts as a hindrance to women's entry in highly technology dependent gig economy.

How to improve the condition of Gig Workers?

- **Empowering Gig Workers: Forming an umbrella union of the gig workers will provide them with collective bargaining power and information symmetry to hold a better footing against the platforms.**
- **Expanding Coverage of schemes: There is an urgent need to clearly define the social security benefits of gig workers.**
- **Reducing Dependency on aggregate platforms: Dedicated loan scheme for gig workers can empower them to become independent entrepreneurs and end their dependency on the platform aggregator companies.**

◎ CONCLUSION

The success of the gig economy will be dependent on how policymakers, futurists, industry, and governments come together to develop an enabling framework and labour laws that allow it to thrive and sustain. Also, companies will have to re-evaluate their current practices to accommodate gig workers.

WHAT IS THE SIGNIFICANCE OF SEMICONDUCTING DEVICES IN INDIAN ECONOMY

CONTEXT:

Recently 1st Semicon India 2022 Conference has been unveiled the Ministry of Electronics and Information Technology as a component of India's Semiconductor Mission.

- The conference was organised to make India a leader in electronics production, semiconductor layout, production and innovation.

Overview

- Analysis
 - ▶ What are semiconductors?
 - ▶ What is India needs a Semiconductor Mission?
 - ▶ Need of Promoting Indigenous Semiconductor Industry
- What are the challenges associated with domestic manufacturing of semiconductors?
- Way forward
- conclusion

India's emergence as a global hub for electronics manufacturing and design.

- The mission is authorised to negotiate with the applicants under the semiconductor fab scheme and the display fab scheme.
- This mission has been given the autonomy to decide the appropriate technology mix, applications, node generation, capacity and propose the structure and quantum of fiscal support for the selected applicants.

What are semiconductors?

- Semiconductors are **crystalline or amorphous solids** that have electrical conductivity opposite at temperatures to those of metal, higher electrical resistance than typical resistant materials, but still of much lower resistance than insulators.
- There are two basic groups or classifications that can be used to define the different semiconductor types:
 - ▶ **Intrinsic material:** An intrinsic type of semiconductor material made to be very pure chemically.
 - ▶ **Extrinsic material:** Extrinsic types of semiconductor are those where a small amount of impurity has been added to the basic intrinsic material.

◎ BACKGROUND

- The **Semicon India Programme** was cleared by the Union Cabinet in December 2021, with a financial outlay of INR 76,000 crore for the development of semiconductors and display manufacturing ecosystems over the next six years.
- A specialised and dedicated "India Semiconductor Mission (ISM)" has been set up within Digital India Corporation to drive India's strategies for developing semiconductors and display ecosystem.
- The scheme has been aimed at making India a global electronics hub as a shortage of microchips hurts industrial production.

◎ ANALYSIS

What is India needs a Semiconductor Mission?

- India Semiconductor Mission (ISM) is a specialised and independent business division within the Digital India Corporation (a not for profit company set up by the Ministry of Electronics and Information Technology).
- The aim of the mission is to build a vibrant semiconductor and display ecosystem to enable

Need of Promoting Indigenous Semiconductor Industry

- **Employment:** Promotion of semiconductor industry will create highly skilled employment opportunities and help India harness its demographic dividend.
- **Reducing Imports Dependency:** As the demand increases, electronics imports are expected to overtake crude oil as India's largest import commodity.
- **Disruption in Global Supply Chains:** Pandemic induced lockdown and restriction followed by

Russia-Ukraine war has led to the shortage of semiconducting devices. It has a cascading effect on other industries as well leading to slowdown in many sectors of the economy.

- **Promoting Make in India:** Indigenous manufacturing of semiconductor devices will give push to the Make in India program and will help in attracting investment.
- **Atmanirbhar Bharat:** Local semiconductor manufacturing will pave the way for India's technological leadership in areas of strategic importance and economic self-reliance.
- **National Security:** India imports most of electronic components used in its communication and critical systems. There is a risk of programming backdoors in the manufacturing process and thus hampering national security and sovereignty of India.
- **Capital intensive:** Semiconductor manufacturing is a highly capital-intensive industry which needs developed ecosystem to thrive.
- **Shortage of process engineers:** Despite having large talent pool of chip designers, India lacks process engineers who can run a front-end chip factory.
- **Dominance of Few Countries:** Taiwan and South Korea dominated the semiconductor manufacturing space. 75% of the semiconductor manufacturing capacity is concentrated in East Asia and China. Any disruption in supply chain due to conflict or restriction poses many challenges for the importing country.
- **Pursuing Western Companies:** India needs to attract foreign investment to built-up chip fab capacity by overcoming the intense competition from other countries.

Required measures

- **Supporting startups:** India has a huge talent of entrepreneurial engineers and **hand-holding of Indian engineers by the government** can produce large payoffs.
- **Budgetary support:** Semiconductor manufacturing is a capital intensive process and will require government's support to reach its full potential.
- **Focus on back-end of manufacturing:** Semiconductor foundries accounts for 65% of industry capital expenditure but only 25% of the value addition. Therefore, to lower the risks of investment, India should especially look at back-end of manufacturing such as assembly, packaging and testing. Once it stabilises and an ecosystem develops, front-end of manufacturing will follow.
- **Cooperation of states:** Semiconductor industry requires stable power, large quantities of pure water and land. These are state subjects, and state governments' proactive cooperation is needed to create the right climate for easy implementation of semiconductor projects.
- **Transport logistics:** Roads, railway and air connectivity to the site are also critical.

◎ CONCLUSION

Semiconductors are foundation for the next Industrial Revolution. While, India ramps up its semiconductor manufacturing capabilities, need of the hour is to look for trusted partners and diversify supply chains to meet the growing need.

CONSTITUTIONALITY AND MORALITY OF ABORTION

CONTEXT:

- The Supreme Court of the United States (SCOTUS) has privately voted to strike down the constitutional right to abortion.

Overview

- Historical case study of abortion rights in USA.
- Indian Provision.
- Women's Reproductive rights
- Reasons behind opting abortion
- Morality of Abortion
- Arguments in favor
- Arguments against abortion

Foetal Viability: Foetal Viability is the point at which a foetus can survive outside the womb, at that time considered to be around 28 weeks, but today due to advancement in medicines and technology, came closer to 23 to 24 weeks.

- **Planned Parenthood v/s Casey case, 1992:** in this judgement Supreme Court of United States (SCOTUS) threw out the so-called trimester framework, while ensuring the 'essential holding', of Roe v/s Wade case, which established the women's constitutional right to abortion until foetal viability.

◎ BACKGROUND:

- Access to health services and the right to make a decision about managing the pregnancy or obtaining an abortion has a lot to do with individual rights. This conservative approach of the state has the potential of causing irreversible damage to female health and it can also be seen as an infringement of women's rights.
- It has become a contentious issue all over the world. Everybody is in a bit of a predicament whether a mother has a right to terminate her pregnancy at any time she wishes or an unborn child has a right to life.
- The law prohibits abortions once cardiac activity gets detected in the embryo, which usually occurs around the sixth week of pregnancy. Most women do not know they are pregnant at that point as it's the early stage of pregnancy. So, it becomes relevant to unearth the Abortion Ethics, which often gets ignored or subjected to misinterpretations.

◎ ANALYSIS:

Historical Background of Abortion Rights in USA:

- **Roe v/s Wade case, 1973:** in this landmark judgment, Supreme Court of United States upheld the abortion right as constitutional rights, effectively striking down wide range of state-level abortion limitations applied before foetal viability.

Indian Provision in Abortion Right

- **Medical Termination of Pregnancy (Amendment) Act, 2021:** in the year 1971, Indian legislators had passed the law, 'Medical Termination of Pregnancy Act' to regulate the procedure of termination of Pregnancy. Recently, Government of India has passed an amendment act to the Medical Termination of Pregnancy act. The provisions included in the Amendment Act:
 - ▶ Categories for termination of Pregnancy :
 - survivors of sexual assault or rape or incest
 - minors and women whose marital status changes during an ongoing pregnancy (widowhood and divorce)
 - women with physical disabilities
 - mentally ill women
 - cases of foetal malformation that has
 - a substantial risk of being incompatible with life
 - or if the child is born it may suffer from such physical
 - or mental abnormalities to be seriously handicapped
- **K S Puttuswami v/s Union of India:** In the landmark judgment in KS Puttaswamy v Union of India, the Supreme Court recognised women's constitutional right to make reproductive choices and the right to "abstain from procreating" was read into the **right to privacy, dignity and bodily autonomy**.

What are women's reproductive rights?

Based on the multiple definitions of reproductive rights, it can be said that they include some or all of the following rights –

- right to safe and legal abortion
- right to control one's reproductive functions
- right to access in order to make reproductive choices free of coercion, discrimination and violence
- right to access education about contraception and sexually transmitted diseases and freedom from coerced sterilization and contraception
- right to protection from gender-based practices such as female genital cutting and male genital mutilation

Reasons women give for wanting abortions, worldwide:

- disruption of education or employment
- lack of support from father
- desire to provide for existing children
- poverty, unemployment or inability to bear children
- interrelation problems with husband or partner
- a women's feels that she is too young to have a child

The morality of Abortion:

- Many of us do believe that at least a few abortions are immoral but the law should not restrict choice in this realm. For example, if abortion is permissible when a pregnancy is due to rape or incest, **that's hardly a general right to abortion or a choice gives to a female.**
- Cardiac activity in a foetus is often considered a sign of potential life. There are chances that the cardiac activity detected on ultrasound is not a true heartbeat. It may be due to the electrical activity, and the valves of the heart may not have formed yet. And the sound of the activity does not indicate the pregnancy is viable (baby can be born and have a reasonable chance of survival). "Coercing them to find out about the pregnancy and make a decision about how to manage it in such a short window (six weeks) is contradictory to ideals of ethical care.

Arguments in favour of Abortion:

- A female is considered a moral person, that is entitled to rights, including the right to life. So, abortion is deemed acceptable as the foetus is not a person. **A list of criteria of personhood is identified, which includes consciousness, reasoning, activity, communication and self-awareness. A foetus undeniably is incapable of fulfilling these criteria.**
- The mother, who is a person, has a right to life and it supersedes the rights of the foetus to choose

whether or not it remains connected to her body.

- Also, pregnancy is assumed to be a foreseeable consequence of heterosexual intercourse, that too when there is no intention to '*have a baby*'. So, denying her the right to abort the child when she was not planning for it is unwarranted.
- **Abortion in self-defence:** It may be ethical for a mother to have an abortion to defend herself from the danger to her mental or physical health than continuing with the pregnancy would cause. Abortion is considered in relation to the '**Doctrine of double effect**'.

The doctrine of double effect: The doctrine says that if performing something morally good has a morally bad side-effect it's ethically righteous behaviour to do it provided the bad side-effect wasn't foreseeable. It holds even if you can anticipate that the bad effect would probably come off.

Arguments Against abortion:

- '**Future like ours**' argument: Abortion is wrong because it deprives the foetus of a potential '*future like ours*'. It suggests that death is a bad thing because it deprives people of all the experiences, enjoyments, opportunities that would make up their future personal life. So, the foetus has an intrinsic potential future value and killing a foetus is wrong as killing an adult is wrong.
- **Killing people is wrong:** Killing an innocent human being is a moral wrong. Those who are against abortions believe that human life begins at conception, and by drawing the same analogy, the foetus is an innocent human being. So, killing the foetus is wrong and abortion is always wrong.

It's her right whether to bring the pregnancy to term or abort it:

- Abortion concerns the autonomy and dignity of the pregnant woman herself. "Autonomy" derives from Greek and means, literally, "self-rule". If a woman who is pregnant wishes to stop being pregnant, it cannot be taken away from her.
- Attitudes to pregnancy are, however, intertwined with how society views sex, women, and the fertile woman specifically. Pregnancy and birth are not trivial inconveniences, such as having a headache. They constitute a major life event, which even when are desired causes immense discomfort and disruption to many women.
- While pregnancy increases the personal responsibilities of a woman it does not plummet her prerogative to decide whether or not to undergo medical treatment. **Her right is not diminished merely because her decision to exercise it may appear morally contrary to the existing or imposed beliefs of the society.**

© CONCLUSION:

The decision of whether or not to bear a child is central to a woman's life, to her well-being and dignity. She ought to be the one deciding it for herself. When Government superintends that decision for her, she is being treated as less than a fully adult human

accountable for her own choices. We need to bestow much greater support to women who may want to conceive and raise their children, but opting out of it for financial, psychological, health, or relationship reasons. Criminalising abortion does not stop abortions, it just makes abortion more unsafe.

SECTION: B

(PRELIMS)

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PM GIFTS NORDIC LEADERS, THE ARTEFACTS THAT REFLECT INDIA'S CULTURAL DIVERSITY AND RICH PAST

◎ **CONTEXT:** Prime Minister Shri Narendra Modi participated in the 2nd India-Nordic Summit along with Prime Minister of Denmark, Iceland, Norway, Sweden and Finland.

About the gifts

The gifts obtained from several Indian states included:

- **Dokra Boat:** A Dokra boat from Chattisgarh to Crown Prince Fredrik
 - The Dokra boat that he presented to the Crown prince of Denmark is a metal casting made using 4000 years old wax casting technique.
- **Silver Meenakari Bird:** A Silver Meenakari Bird figure from Banaras to Crown Princess Mary.
 - The silver Meenakari bird from Benaras is made through a silver enameling technique that has its root in erstwhile Persia.
 - The base is a silver sheet attached to a metallic base.
- **Brass 'Tree of Life':** A Brass 'Tree of Life' from Rajasthan, which PM Modi gifted to his Finland counterpart Sanna Marin
 - The brass 'Tree of Life' handmade sculpture represents the connection of human life to mother nature and the candle stand represents light.
- **Rogan painting:** A Rogan painting from Gujarat to Queen Margrethe II of Denmark.
 - The Rogan painting from Gujarat's Kutch area is made from boiled oil and vegetable dyes.
- **Dhaal:** Norway Prime Minister Jonas Gahr Store received a 'Dhaal' with Koftgiri art from Rajasthan.
 - Koftgiri is inlay work with gold and silver wires used for decorating arms and shields and at present used over decorative pieces.
- **Pashmina stole:** PM Modi gifted Pashmina stole packed in Papier Mache box from Jammu and Kashmir to his Sweden counterpart Magdalena Andersson.
 - Kashmiri Pashmina shawls are known for their warmth and soft fabric. Its exquisite craftsmanship and reminiscent designs are beyond comparison.
 - The wool used comes from a special breed of goat found in the high-altitude regions of the Himalayas.
 - Pure gold foil and paint impart a royal look to the piece.

■ India and Nordic Countries:

- Nordic countries collectively represent an economy of more than \$1.6 trillion.
- As per Nordic statistics, total bilateral trade in goods and services between India and the Nordic countries is \$13 billion.
- India and the Nordic states have huge strengths and complementarities.
 - They share a convergence in values in freedom of speech, religion and media; all are free-market economies and they all promote gender equality.

INDIA ANNOUNCES WORLD'S LARGEST FILM RESTORATION PROJECT

◎ **CONTEXT:** The Union Minister of Information & Broadcasting has announced the World's largest film restoration project under National Film Heritage Mission (NFHM).

About:

- Out of the total outlay of Rs 597 crore earmarked for this mission, Rs.363 crores is exclusively put for the restoration project which is all set to commence in full swing at the National Film Archive of India (NFAI).
- About 2200 Indian films would undergo restoration under the National Film Heritage Mission.

National Film Heritage Mission (NFHM):

- **Launched in:** 2016 by the Ministry of Information & Broadcasting
- **Aim:** To preserve, restore and digitize India's cinematic heritage.
- **The objectives of NFHM are:**
 - Condition assessment of film reels to ascertain the remaining life of the film,
 - 2K/4K picture and sound restoration of landmark films of Indian and recording of new picture and sound inter-negatives of each film,
 - Digitization of films,
 - Construction of archival and preservation facilities called vaults,
 - Trainings and workshops for in-house capacity building, and
 - Web-based end to end IT solution.
- **Implementing Agency:** National Film Archives of India (NFAI).

National Film Archive of India (NFAI):

- National Film Archive of India (NFAI) was set up in February, 1964 as a media unit of the Ministry of Information & Broadcasting, Government of India.
- The primary objective of NFAI is acquiring and preserving Indian cinematic heritage.
- This includes preservation of film and non-film material including but not limited to celluloid, stills, glass slides, posters, lobby cards, scripts and song booklets.
- **Headquarters:** Pune, Maharashtra.

LEPAKSHI TEMPLE

◎ **CONTEXT:** The Veerabhadra Swami temple, which got recently listed in the UNESCO's tentative list of world heritage sites in India for 2022, is a glorious example of the much-celebrated Vijayanagara architecture.

About Lepakshi Temple Complex:

- Lepakshi temple is located in Andhra Pradesh, built during the era of Vijayanagara Empire.
- The temple is famous for its three shrines, which are dedicated to

- Lord Vishnu
- Lord Shiva
- Lord Veerabhadra.
- The **Veerabhadra Temple** was constructed by two brothers, Viranna and Virupanna.
- The temple is built in the **Vijayanagar architectural style** and has beautiful sculptures adorning the walls.
- It is situated atop the **Kurmasailam (tortoise-shaped) hill**.
- There is a huge Nandi bull made from a single granite stone.
 - Lepakshi has many murals from the Vijayanagar Era and the famous sculpture of the snake on the Nagalinga.
- The original structure is said to have been built by **Sage Agastya**, and finds mention in the **Skanda Purana** as one of the *108 Saivaite pilgrimage centres of ancient India*.
- The entire temple complex was believed to be re-built by **Virupanna**, and his brother **Veeranna** under the rule of **Vijayanagara king Achyuta Devaraya**.
- The main shrine, the **70-pillared nrutya mantapa**, the detailed and beautiful carvings on them depicts gods and artistes playing musical instruments and dancers in various poses and mudras.
 - The high ceiling is filled with long panels of fresco paintings.



Nagalinga



Fresco Paintings

The Ramayana link

- The name of the place itself is linked with the Ramayana.
- Legend has it that Jatayu fell at this spot after Ravana cut its wings when he tried to prevent Sita's abduction.
- Rama stumbled upon the bird when searching for Sita.
- After the injured bird narrated what had happened, Rama coaxed him to rise again, "le, pakshi" (rise, bird in Telugu).

The Age of Vijaya Nagara (1336-1647) AD :

- In 1336, Vijayanagar kingdom was established by Harihara and Bukka, who were two brothers and served in the army of Muhammad-bin-Tughlaq.
- They broke away from the Delhi Sultanate and established an independent state in Karnataka and established the capital city Vijayanagar on the banks of river Tungabhadra in 1336.
- Harihara and Bukka were helped and inspired by contemporary scholar and a saint Vidyaranya for the establishment of their kingdom.
- **Sources:**
 - ▶ **Literary Sources:** Rayavachakam by vishvanatha sthanapati
 - ▶ **Foreign Accounts:**
 - Nicholo de conti visited Vijayanagar durinh times of Devaraya 1 and gave details about his personality.
 - Abdul Razzaq from Persia visited during Devaraya 2. He described the beauty of capital city Hampi.
 - Domingo Paes and Barbosa visted during Krishnadevraya time.
 - Nuniz visted during the times of achyuthdevaraya
 - ▶ **Inscriptions:**
 - Bitragunta inscription is the major source for construction of family history of sangama dynasty.
 - Srirangam copper plates of Devaraya II provide the genealogy and achievements of Vijayanagar rulers.
 - Various copper plate inscriptions of krishnadevraya time.
 - The Hampi ruins and other monuments of Vijayanagar provide information on the cultural contributions of the Vijayanagar rulers.
 - ▶ **Political History:** Vijayanagar was ruled by four different dynasties
 - Sangama dynasty(1336-1486)
 - Saluva dynasty(1486-1506)
 - Tuluva dynasty(1506-1565)
 - Aravidu dynasty(1570-1647)
 - ▶ **Architecture:**
 - They used the Dravidian style of architecture later added some unique features to it and it came to be called as Vijayanagara style.
 - Preferred for its durability, local hard granite was the building material of choice, as it had been for the Badami Chalukyas.

- Vijayanagar temples are surrounded by strong enclosures and characterized by ornate pillared kalyanamandapa (marriage halls); tall rayagopurams (carved monumental towers at the entrance of the temple) built of wood, brick, and stucco in the Chola style; and adorned with life-sized figures of gods and goddesses.
- This dravida style became popular during the reign of Krishnadeva Raya and is seen in South Indian temples constructed over the next two centuries.
- The courtly architecture of Vijayanagar is generally made of mortar mixed with stone rubble and often shows secular styles with Islamic-influenced arches, domes, and vaults.
- Some famous temples exemplifying the Vijayanagar style include the Virupaksha Temple at Hampi and the Hazara Rama temple of Deva Raya I etc.

IRON AGE IN TAMIL NADU DATES BACK 4,200 YEARS, 'OLDEST IN INDIA'

◎ **CONTEXT:** Iron implements unearthed from excavations at a small hamlet called Mayiladumparai have revealed that the Iron Age in Tamil Nadu dates back 4,200 years, potentially making it the oldest in India.

Key-highlights of the Findings:

- Previously, the Iron Age burial site of Adichanallur in southern Tamil Nadu had revealed an impressive collection of iron implements, currently housed in Chennai's Egmore Museum, dated between 1000 BCE and 600 BCE.
- Among the other important findings is evidence that the **late Neolithic phase** in Tamil Nadu has been identified to have begun before 2200 BCE, based on a cultural deposit of 25 cm below the dated level.
- Archaeologists also found that black and red ware pottery was introduced in the late Neolithic phase itself, rather than the widely held belief that this occurred in the Iron Age.
- The excavation conducted in the year 2021 at Mayiladumparai in Krishnagiri district of Tamil Nadu yielded two important AMS dates that provide a clue for understanding the introduction of iron and also the transformation from the late Neolithic Phase to the Early Iron Age.
- The site met with Neolithic and Iron Age habitation mound in the terraces of the hillock called Sāṇōrappaṇmalai.
- The rock shelter at the top of the hill yielded habitation material with a petroglyph.
- The rock art with paintings both in red and white pigments was observed in the rock shelter called Niḷal-suṇai (nekul-juṇai) and the grooves used for polishing Neolithic celts were also noticed near the rock shelter

CYCLONIC STORM ASANI

◎ **CONTEXT:** The cyclonic storm Asani weakened into a deep depression and crossed the Andhra Pradesh coast.

About Cyclone Asani:

- Cyclone Asani is brewing in the southern Andaman Sea.
- The name Cyclone Asani has been given by Sri Lanka. It means ‘wrath’ in Sinhalese.
- Cyclone Asani has weakened into a deep depression with a wind speed of 55-65 kmph gusting to 75 kmph.
- Gulab, Titli, Hudhud, Helen, and Lehar — these five cyclones have made landfall over Andhra Pradesh in the last 10 years.
- The cyclone that will form after Asani will be called Sitrang, a name given by Thailand.



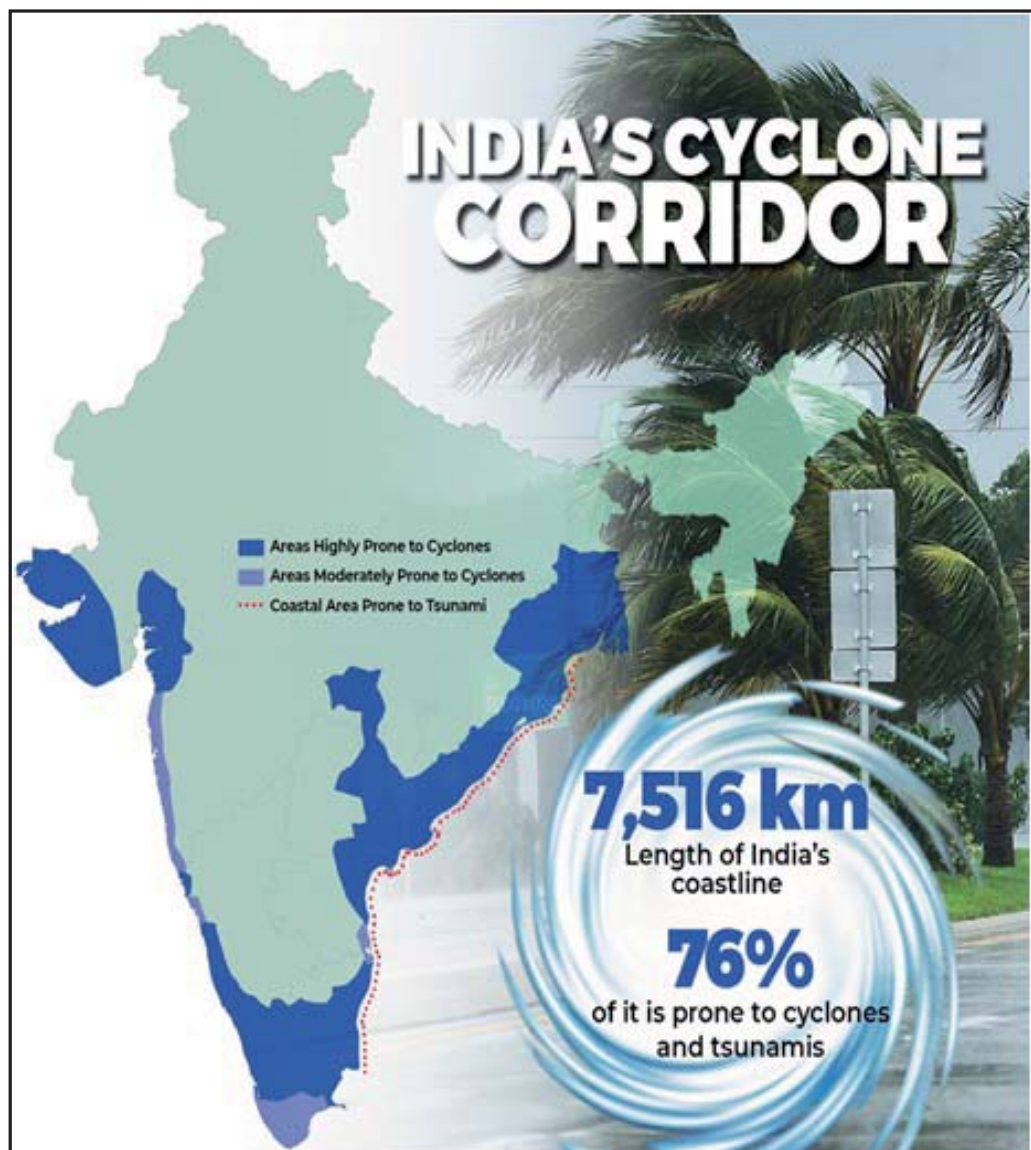
India Meteorological Department Tropical Cyclone Intensity Scale	
Category	Sustained winds (3-min average)
Super Cyclone Storm	> 120 kt > 222km/h
Very Severe	64-119kt 118-221 km/h
Severe Cyclonic Storm	48-63kt 88-117 km/h
Cyclonic Storm	34-47kt 62-87 km/h
Deep Depression	28-33kt 52-61 km/h
Depression	<27kt < 51km/h

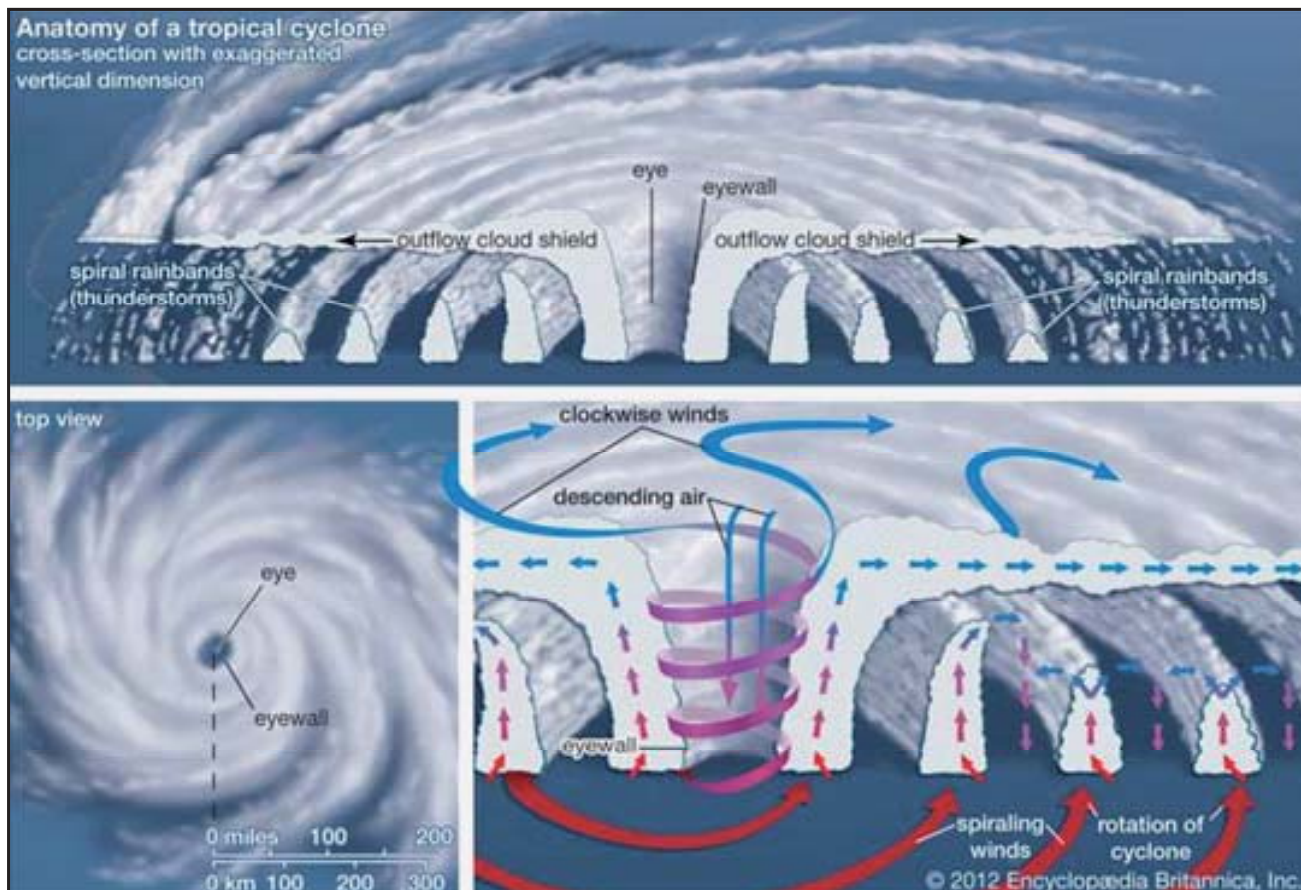
What are Tropical Cyclones?

- Tropical cyclones, also known as typhoons or hurricanes, are among the most destructive weather phenomena.
- They are intense circular storms that originate over warm tropical oceans, and have maximum sustained wind speeds exceeding 119 kilometres per hour and heavy rains.
- However, the greatest damage to life and property is not from the wind, but from secondary events such as storm surges, flooding, landslides and tornadoes.

Different Names

- Depending on its location and strength, a tropical cyclone is referred to by different names, including hurricane, typhoon, tropical storm, cyclonic storm, tropical depression, and simply cyclone.
 - **Hurricane:** Atlantic Ocean
 - **Typhoon:** North-western Pacific Ocean
 - **Tropical cyclones:** South Pacific or the Indian Ocean





The new list:

- The list comprises names of 13 cyclones each for the 13 member countries, totaling to 169.
- The names for India include **Gati, Tej, Murasu, Aag, Vyom, Jhar, Probaho, Neer, Prabhanjan, Ghurni, Ambud, Jaladhi and Vega.**
- Some of the names for Bangladesh are Nisarga, Biparjoy, Arnab and Upakul.
- Tropical cyclones forming over different ocean basins are named by the concerned RSMCs & TCWCs.
- For north Indian Ocean, including Bay of Bengal and Arabian Sea, the RSMC, New Delhi, assigns the name to tropical cyclones following a standard procedure, an IMD release stated.

Indian Meteorological Department:

- Indian Meteorological Department was established in the year 1875 with its headquarters at Calcutta.
- IMD's headquarter shifted to Shimla in 1905, to Pune in 1928 and then to Delhi in 1944.
- Worldwide, there are six Regional Specialised Meteorological Centres (RSMCs) and five regional Tropical Cyclone Warning Centres (TCWCs) which issue advisories and names of tropical cyclones.
- The IMD is one of the six RSMCs to provide tropical cyclone and storm surge advisories to 13 member nations, which include **Bangladesh, India, Iran, Maldives, Myanmar, Oman, Pakistan, Qatar, Saudi Arabia, Sri Lanka, Thailand, the UAE and Yemen.**

JOG FALLS PROJECT SUFFERS SETBACK AS CENTRE ASKS KARNATAKA ABOUT IMPACT ASSESSMENT

◎ CONTEXT:

Karnataka's Forest Department, which was supportive of the Jog Development Projects and had recommended 'in principal approval' of environmental clearance for a five-star hotel, suffered a setback with the Centre questioning whether any environmental impact study has been carried out.

About the project:

- A proposal was submitted by Karnataka to **seek diversions of 0.8536 hectares of forest land** in the Nadavada Talakalale village, Sagar Taluk. The proposal was submitted **to build a five-star hotel**.
- The **Living Earth Foundation (LEAF)**, an environmental research and advocacy organisation that is based in Bengaluru **had filed objections** regarding the developmental projects and the MoEF&CC also enquired about whether the objections have been clarified or not.

What would be the environmental impacts?

- To develop this area into a tourist attraction significant amount of construction would need to be done on the forest land within the Sharavati Valley Lion Tailed Macaque Sanctuary's Eco-Sensitive Zone.
- The LEAF has stated that the constructions in this zone will cause major environmental impacts which will affect the flora and fauna of this area.
- Also, after construction, the increase in footfalls in this area will bring rise to additional challenges such:
 - increase in dry and wet waste
 - water consumption
 - additional vehicular traffic and this will cause emission
 - The area will be receiving artificial light due to the vehicles which will be harmful to the flora and fauna of the area
- LEAF also argues that no study has been conducted to gauge the environmental impacts of the developmental project and no plans have been developed to lessen the impacts.

About Jog Falls

- It is **created by the Sharavathi River** falling from a height of 253 m (830 ft), making it the **second-highest plunge waterfall in India**.
- Located near Sagara, **Shimoga District** of Karnataka state.
- It is also called by alternative names of Gerusoppa falls, Gersoppa Falls and Jogada Gundi.



Sharavathi River

- The Sharavathi River basin is **situated in the central part of the Western Ghats**.
- It **originates at Ambuthirtha** and **flows towards west** for about 132 km before joining the **Arabian Sea** at Honnavar.
- It is one of the west flowing rivers of Karnataka.
- It is recognized as a hot speck in the biodiversity hotspot.
- It is the dwelling place for a rare freshwater fish, *Batasio sharavatiensis*.

TOTAL FERTILITY RATE

◎ CONTEXT:

The Total Fertility Rate (TFR), an average number of children per woman, has further declined from 2.2 to 2.0 at the national level between National Family Health Survey (NFHS) 4 and 5.

Total fertility rate (TFR):

- According to **MOSPI**, **Total fertility rate (TFR)** is defined as the average number of children that would be born to a woman if she experiences the current fertility pattern throughout her reproductive span (15-49 years).
- The fertility rate has declined across the majority of the states.
- All states MP, Rajasthan, UP, Jharkhand, Bihar, Manipur and Meghalaya have attained a replacement level of 2.1.

Reasons for demographic transition:

- Introduction of initiatives like contraception
- Government health and family welfare schemes
- Special emphasis on education of the girl child
- Exponential growth of institutional births
- Overall improvement in health and nutrition

Key highlights of the survey:

- There are only five States in India which are above replacement level of fertility of 2.1 - Bihar (2.98), Meghalaya (2.91), Uttar Pradesh (2.35), Jharkhand (2.26) Manipur (2.17), as per the national report of the NFHS-5.
- Institutional births have increased from 79% to 89% in India and in rural areas around 87% births being delivered in institutions and the same is 94% in urban areas.
- As per results of the NFHS-5, more than three-fourths (77%) children age 12-23 months were fully immunised, compared with 62% in NFHS-4.
- The level of stunting among children under five years has marginally declined from 38% to 36% in the country since the last four years.
- Stunting is higher among children in rural areas (37%) than urban areas (30%) in 2019-21.
- NFHS-5 shows an overall improvement in Sustainable Development Goals indicators in all States/Union Territories (UTs).
 - The extent to which married women usually participate in three household decisions (about health care for herself; making major household purchases; visit to her family or relatives)
- Participation in decision-making is high, ranging from 80% in Ladakh to 99% in Nagaland and Mizoram.
 - Rural (77%) and urban (81%) differences are found to be marginal.
 - The prevalence of women having a bank or savings account that they use has increased from 53% to 79% in the last four years.
- Compared with NFHS-4, the prevalence of overweight or obesity has increased in most States/UTs in NFHS-5.
 - At the national level, it increased from 21% to 24% among women and 19% to 23% among men.

E-PASSPORT

◎ CONTEXT:

The government is using technology to usher in transparency. It is now planning to roll out e-passports soon.

What is e-passport?

- According to the proposal, the e-passport will be a **combination of paper and electronic passport, with a Radio Frequency Identification (RFID) chip.**
- An antenna will be embedded as an inlay in the back cover.
- The passport's critical information will be stored in the chip and printed on the data page.
- The characteristics of the e-passport are specified by the International Civil Aviation Organization, an agency of the United Nations.

Privacy and Security:

- The government clarified that data of the citizens **obtained for e-passport will be used only for the purposes of issuance of the passport and related services.**
- There will not be any secondary use of the data, thereby safeguarding privacy concerns.
- Further transaction processes are authenticated by digital certificates and are

cryptographically signed.

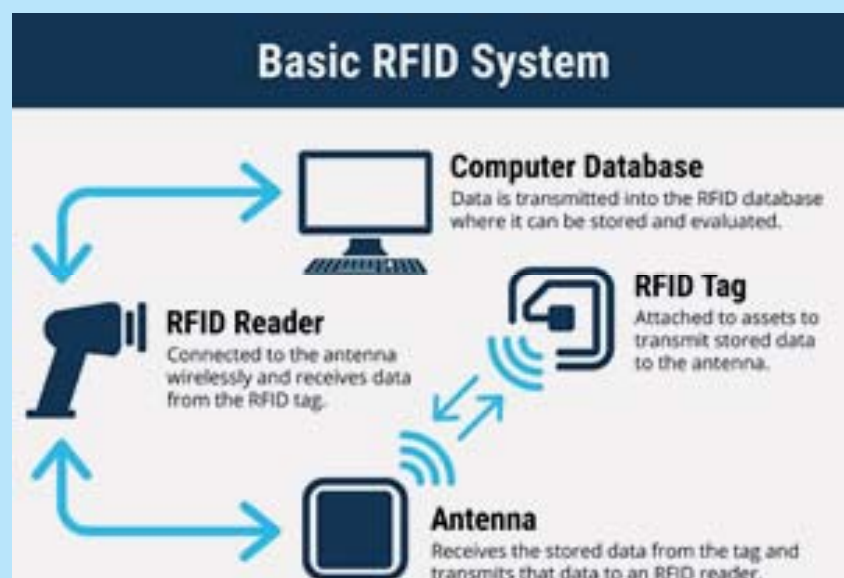
- Once captured, the **data is stored in a secured industry-standard database**.
- The Security Operations Centre will perform relevant database security-related controls round the clock.

Implementation and technical responsibilities:

- **Tata Consultancy Services (TCS)** has reportedly bagged the contract for delivering e-passports.
 - While the government will source the hardware chips, TCS will be responsible for their encoding.
- The government has entrusted **National Informatics Centre (NIC)** with the technical responsibilities.
- The e-passports will be produced by the India Security Press in Maharashtra's Nashik, which has issued letters of intent for the procurement of 4.5 crore ICAO-compliant electronic chips.
- Interestingly, the government issued **India's first e-passport with biometric details to former President Pratibha Patil in 2008**.
- E-passports enhance the security of passports, eliminate duplication, eliminate data tampering and will be used by border control authorities for monitoring the entry and exit of passengers.

What Is Radio Frequency Identification (RFID)?

- Radio Frequency Identification (RFID) is a technology that uses radio waves to passively identify a tagged object.
- It is used in several commercial and industrial applications, from tracking items along a supply chain to keeping track of items checked out of a library.
- Radio Frequency Identification (RFID) is a type of passive wireless technology that allows for tracking or matching of an item or individual.
- The system has two basic parts: tags and readers.
 - The reader gives off radio waves and gets signals back from the RFID tag, while the tag uses radio waves to communicate its identity and other information.



FLOATING BORDER OUTPOSTS ON INDO-BANGLADESH BORDER

◎ **CONTEXT:** Union Home and Cooperation Minister inaugurated three floating Border Outposts (BOP) on the Indo-Bangladesh border to protect the inaccessible areas of the Sundarbans.

About:

- The **floating Border Outposts (BOP) Sutlej, Kaveri and Narmada** have been built by the Koch Shipyard.
- The floating BOPs are equipped with modern facilities and safety equipment.
- The front section of the BOP is **bullet proof** for the safety of the jawans.
- A BOP is accompanied **by 6 small boats** and it has adequate **arrangements to prevent both infiltration and smuggling**.
- Laid the foundation stone of '**Maitri Sangrahalaya**' or 'Friendship Museum'.
- A **boat ambulance** at a floating border outpost (BOP) at Haridaspur in the state.
- The BOPs with **three digi-sets can remain afloat without refilling fuel for a month** and will guard the 80-km riverine border between India and Bangladesh.
 - Three more BOPs will be added to the fleet in the days to come.



Additional Information:

- The government of Bangladesh will organise several programmes across the country to celebrate the 181st birth anniversary of Gurudev Rabindranath Tagore on 8 May.
- The main event will be held at the Rabindra Kuthibari in Shilaidaha of Kumarkhali upazila of Kushtia district.
- The theme of this year's celebration of Gurudev Rabindranath Tagore birth anniversary has been kept as 'Crisis of Humanity and Rabindranath'.
- The Ministry of Culture and Bangla Academy will print memorabilia and posters on the occasion of the poet's birth anniversary.

Life of Rabindranath Tagore

- Tagore took birth in the city of Calcutta on 6th May, 1861
- His school life enriched his thoughts about the importance of school. According to him school was a place which hinders the native growth of the child and brought unwarranted and oblivion harm to the development of personality. All this made him to construct his own philosophy of life and education.
- At the age of 40, he himself initiated to set up his Shantiniketan Ashram (School) with around ten boys only to materialize his own ideas and ideals.
 - ▶ This institution turned into a world famous Vishva Bharati - a seat of international university and a melting point of Eastern and Western culture-a junction of humanity.
- Rabindranath Tagore a.k.a Gurudev passed away on August 7, 1941 leaving his permanent impression in the hearts of mankind.

THE INDIAN LEG OF THE GREAT BACKYARD BIRD COUNT RECORDS AN IMPRESSIVE 1,017 SPECIES

◎ CONTEXT:

Bird Count India supervised the India portion of the four-day event, of counting birds. Participants reported their observations to eBird (www.ebird.org/india), the world's biggest citizen research platform for biodiversity.

Key findings:

- Checklist resulted in witnessing of 1,017 species, or 75% of the total number of species known to exist in the nation.
- The house crow, common mynah, and black drongos remained the most regularly seen birds in South India.
- The Andaman coucal, red-whiskered bulbul, white-throated kingfisher, and brown shrike are among the top five new species recorded in the Andaman and Nicobar Islands.
- Kerala, Karnataka, Gujarat, and Maharashtra were the states that contributed the most data.
- In Tamil Nadu's Salem district alone, nearly 8,000 checklists were posted.
- While India had previously placed third behind the United States and Canada in number of checklists posted, it now ranks second after the United States, which has uploaded about two lakh checklists.

About eBird India

- The eBird India portal is designed for the use of birders and eBirders from India.
- Keep visiting for news and events regarding birding in India and for tips and tricks to make your eBirding more useful and rewarding.
- The eBird India portal is managed by Bird Count India, a partnership of a large number of organizations and groups working to increase our collective understanding of the distribution, abundance, and population trends of Indian birds.

HATHI MITRAS: CHHATTISGARH'S SOLUTION TO TACKLING HUMAN-ELEPHANT CONFLICT

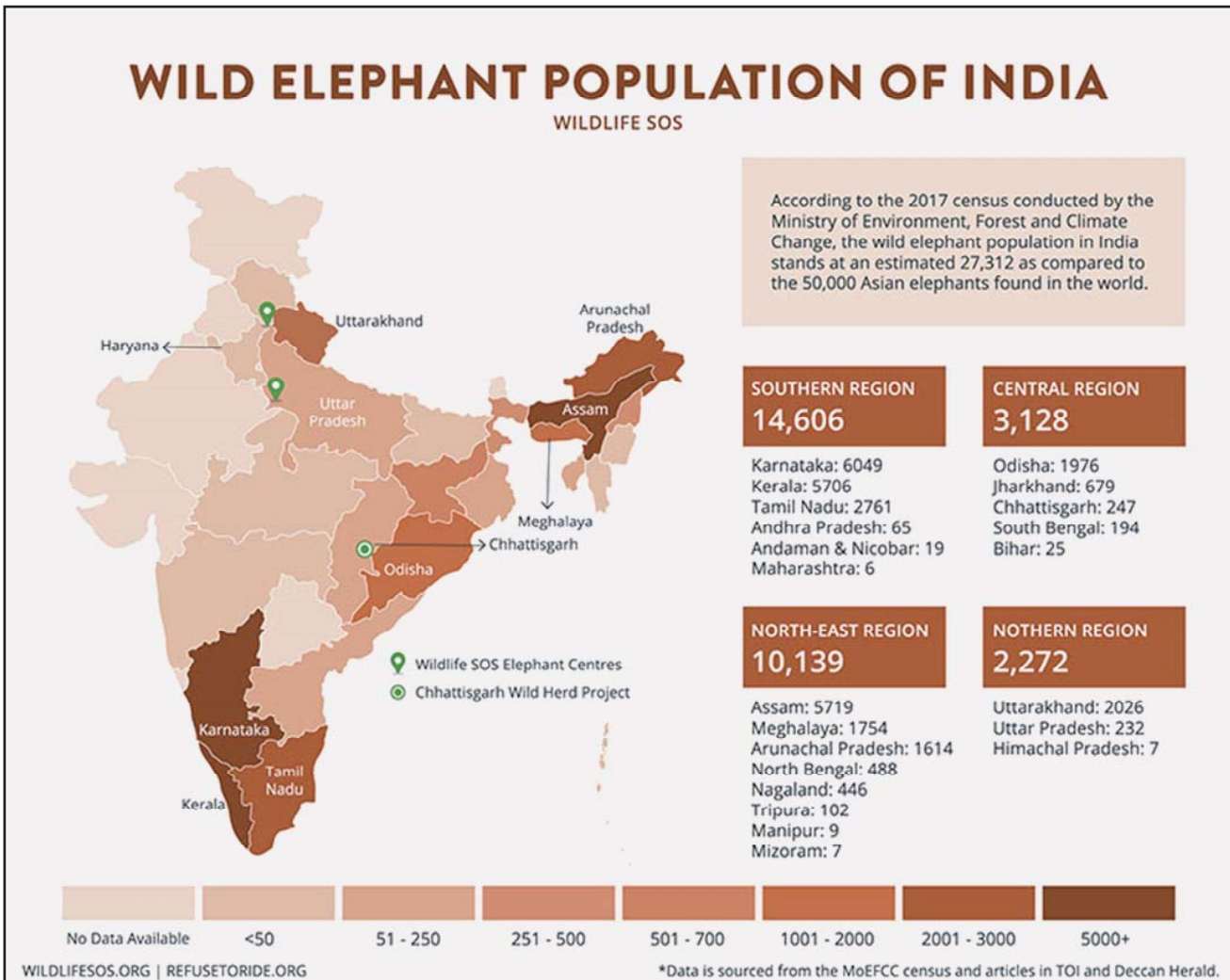
◎ **CONTEXT:** Village residents known as **hathi mitras** or 'friends of elephants' dedicatedly track pachyderm movements to help prevent casualties and crop loss.

Human-Wildlife Conflict:

- Human-wildlife conflict is when encounters between humans and wildlife lead to negative results, such as loss of property, livelihoods, and even life.
- As human populations and demand for space continue to grow, people and wildlife are increasingly interacting and competing for resources, which can lead to increased human-wildlife conflict.

Tackling Human-Elephant Conflict (HEC) in Chhattisgarh:

- In September 2018, the Chhattisgarh Elephant project was initiated, focusing on the Mahasamund, Balodabazar, and Raipur districts of Chhattisgarh.
- The project had four core pillars:
 - GPS radio-collaring the matriarch elephant of one herd,



- awareness and training of villagers about co-existing with elephants, and
- Studying the ranging pattern, seasonal ranges, and behavioral patterns of elephants.
- To come up with tangible solutions and a more nuanced understanding of HEC.

Hathi Mitras:

- The residents of villages affected by human-elephant conflict are engaged by the state forest department to dedicatedly track elephants, warn people about their movement and send updates in a Whatsapp group created for the purpose.
- Hathi mitras teach people how to avoid encounters during village-level meetings.
- Hathi mitras agree that most casualties occur due to a lack of knowledge about elephant behaviour and movement. Encounters mostly take place at night when visibility is low.
- Hathi mitras track elephants through the help of fresh dung and foot prints. Though this helps minimise encounters, crop loss is inevitable.

UN CONVENTION TO COMBAT DESERTIFICATION'S COP15.

◎ CONTEXT:

The fifteenth session of the Conference of the Parties to the UN Convention to Combat Desertification (UNCCD COP 15) has been hosted in Abidjan, Côte d'Ivoire.

UN Convention to Combat Desertification COP 15:

- The COP15 theme, '**Land. Life. Legacy: From scarcity to prosperity**', is a call to action to ensure land, the lifeline on this planet, continues to benefit present and future generations.
- COP15 brought together leaders from governments, the private sector, civil society and other key stakeholders from around the world to drive progress in the future sustainable management of one of our most precious commodities: **land**.
- Land is the bedrock of a healthy, productive society, and COP15 attempted to explore links between land and other key sustainability issues.
- COP 15 is a key moment in the fight against desertification, land degradation and drought.
 - It was built on the findings of the **second edition of the Global Land Outlook** and offer a concrete response to the interconnected challenges of land degradation, climate change and biodiversity loss as we step into the **UN Decade on Ecosystem Restoration**.

The new **UNCCD 2018-2030 Strategic Framework** is the most comprehensive global commitment to achieve **Land Degradation Neutrality (LDN)** in order to restore the productivity of vast expanses of degraded land, improve the livelihoods of more than 1.3 billion people, and reduce the impacts of drought on vulnerable populations to build.

About UNCCD:

- Established in 1994, the United Nations Convention to Combat Desertification (UNCCD) is the **sole legally binding international agreement linking environment and development to sustainable land management**.

- The Convention addresses specifically the arid, semi-arid and dry sub-humid areas, known as the **drylands**.
- The UNCCD is particularly committed to a bottom-up approach, encouraging the participation of local people in combating desertification and land degradation.
- The UNCCD secretariat facilitates cooperation between developed and developing countries, particularly around knowledge and technology transfer for sustainable land management.
- Its **197 Parties** aim, through partnerships, to implement the Convention and achieve the Sustainable Development Goals.
- The **UNCCD collaborates closely with the other two Rio Conventions;**
 - the Convention on Biological Diversity (CBD)
 - the United Nations Framework Convention on Climate Change (UNFCCC)

Conference of Parties (COP):

- The COP was established by the Convention as the **supreme decision-making body**.
- It comprises ratifying governments and regional economic integration organizations, such as the European Union.
- The **14th session was held in India**. The latest and 15th session is being held in Abidjan, Côte d'Ivoire.
- It has been **meeting biennially since 2001**.

Conference of Parties (COP)	Country	Year
COP 1	Rome, Italy	1997
COP 2	Dakar, Senegal	1998
COP 3	Recife, Brazil	1999
COP 4	Bonn, Germany	2000
COP 5	Geneva, Switzerland	2001
COP 6	Havana, Cuba	2003
COP 7	Nairobi, Kenya	2005
COP 8	Madrid, Spain	2007
COP 9	Buenos Aires, Argentina	2009
COP 10	Changwon, South Korea	2011
COP 11	Windhoek, Namibia	2013
COP 12	Ankara, Turkey	2015
COP 13	Ordos, China	2017
COP 14	New Delhi, India	2019
COP 15	Abidjan, Côte d'Ivoire.	2022

SHIGELLA INFECTION IN KERALA

- ◎ **CONTEXT:** The Kerala health department recently identified *Shigella* bacteria as the cause for the food poisoning incident in Kasaragod, which claimed the life of a 16-year-old girl and led to 30-odd others being admitted to hospital.

What is Shigella?

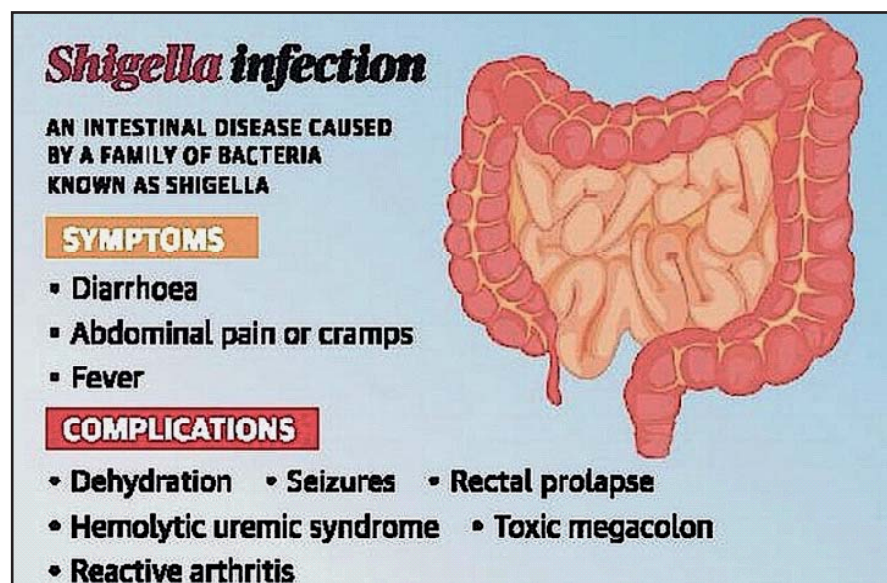
- *Shigella* is a bacterium that belongs to the **enterobacter family** — a group of bacteria that **reside in the intestine**, not all of which cause disease in humans.
- It mainly affects the intestine and **results in diarrhoea**, sometimes bloody, stomach pain, and fever.
- The infection spreads easily as it takes only a **small number of bacteria to make someone ill**.
- It is a **food- and water-borne infection**, and can happen when someone consumes contaminated food.
- The disease is **easily spread** by direct or indirect contact with the excrement of the patient.

What are the symptoms?

- Diarrhoea (often containing blood or mucous)
- Stomach pain or cramps
- Fever
- Nausea or vomiting

How widespread is Shigella infection?

- Shigellosis happens, but it is **not a very common infection**.
- *Shigella* outbreaks appear to be exacerbated during pregnancy and in children less than five years of age, and in those with weakened immune systems.
- There are **four types of Shigella bacteria** that affect humans — *Shigella sonnei*, *Shigella flexneri*, *Shigella boydii*, and *Shigella dysenteriae*.
 - The fourth type causes the most severe disease because of the toxin it produces.



Shigella infection

AN INTESTINAL DISEASE CAUSED BY A FAMILY OF BACTERIA KNOWN AS SHIGELLA

SYMPTOMS

- Diarrhoea
- Abdominal pain or cramps
- Fever

COMPLICATIONS

- Dehydration • Seizures • Rectal prolapse
- Hemolytic uremic syndrome • Toxic megacolon
- Reactive arthritis

The infographic includes a detailed anatomical illustration of the human large intestine, showing its characteristic sacculated structure. The text is presented in a clear, organized layout with bold headings and bullet points.

VPN REGULATIONS

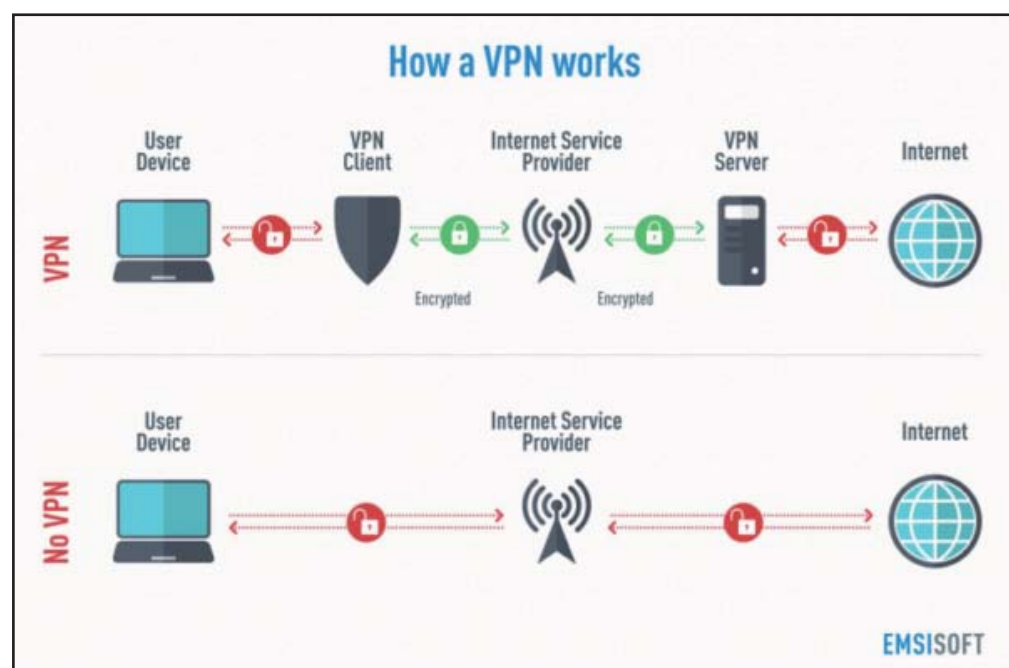
- © **CONTEXT:** Virtual private network (VPN) service providers are up in arms against a new directive of The Indian Computer Emergency Response Team or Cert-In that mandates they must maintain all customer data for five years.

What Is A VPN?

- A Virtual Private Network (VPN) creates a secure private network from a public internet connection.
 - Simply put, VPNs help you hide your internet protocol (IP) address so your online actions are virtually untraceable.
- A VPN encrypts your connection to provide greater privacy as it prevents others from seeing the data you're transferring.
- It hides your digital activity, including the search history, links you click or the files you download.
- This keeps your data secure from any spying attempts, hackers, and cybercriminals, particularly on free public Wi-Fi networks.
- A VPN encrypts your network traffic and disguises your network identity using its servers all over the world.
 - This makes it almost impossible for third parties to track your online activities and steal your data.

How do these networks function?

- Any and all devices connected to the internet are a part of a large network of computers, servers and other devices spread across the world.
- To identify each device connected to the internet, service providers globally assign a unique address to each such device called the internet protocol address or IP address.
- It is this IP address that helps websites, law enforcement agencies and even companies track down individual users and their accurate location.



What does the new CERT-IN directive say?

- VPN providers will need to store validated customer names, their physical addresses, email ids, phone numbers, and the reason they are using the service, along with the dates they use it and their "ownership pattern".
- In addition, Cert is also asking VPN providers to keep a record of the IP and email addresses that the customer uses to register the service, along with the timestamp of registration.
- Most importantly, however, VPN providers will have to store all IP addresses issued to a customer and a list of IP addresses that its customers generally use.

What does this mean for VPN providers?

- VPN services are in violation of Cert's rules by simply operating in India.
- That said, it is worth noting that 'no logs' does not mean zero logs.
- VPN services still need to maintain some logs to run their service efficiently.

Indian Computer Emergency Response Team (CERT-IN)

- CERT-IN is an office within the Ministry of Electronics and Information Technology.
- It is the nodal agency to deal with cyber security threats like hacking and phishing. It strengthens the security-related defense of the Indian Internet domain.
- It was formed in 2004 by the Government of India under the Information Technology Act, 2000 Section (70B) under the Ministry of Communications and Information Technology.

NASA CLIMATE SCIENTIST WINS WORLD FOOD PRIZE

◎ CONTEXT:

Cynthia Rosenzweig, a NASA climate scientist, has been named the 2022 World Food Prize Laureate for her work on the impact climate change has on food production worldwide.

About the World Food Prize:

- The World Food Prize was created in 1986 by Nobel laureate Norman Borlaug.
- It is a prestigious international award conceived as the "Nobel Prize for Food and Agriculture"
- **Mission:** to elevate innovations and inspire action to sustainably increase the quality, quantity and availability of food for all.
- The World Food Prize is the foremost international honor recognizing the achievements of individuals who have advanced human development by improving the quality, quantity or availability of food in the world.
- In addition to the cash award of USD 2,50,000, the laureate receives a sculpture designed by the noted artist and designer, Saul Bass.



NASA TO SHUT DOWN SOFIA TELESCOPE THAT FOUND WATER ON MOON

© CONTEXT:

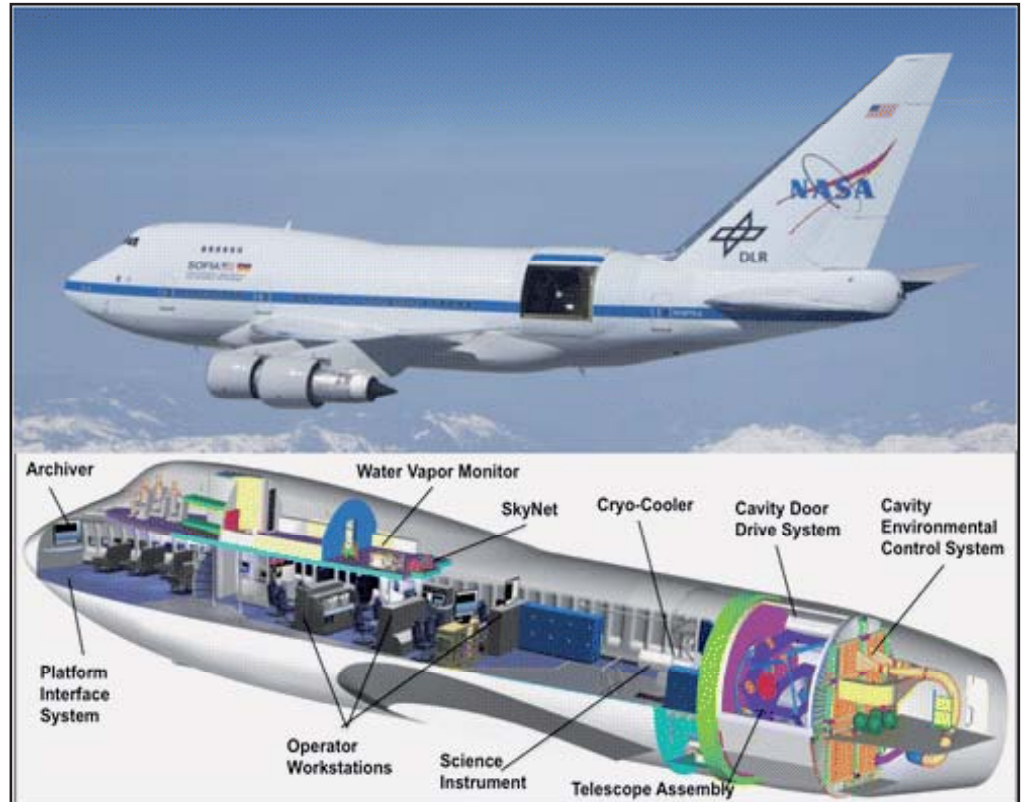
NASA and the German Aerospace Center are permanently shutting down the Stratospheric Observatory for Infrared Astronomy (SOFIA) .

About Stratospheric Observatory for Infrared Astronomy (SOFIA):

- SOFIA, the Stratospheric Observatory for Infrared Astronomy, is a **Boeing 747SP** aircraft modified to carry a **2.7-meter (106-inch) reflecting telescope**.
- **Flying into the stratosphere at 38,000-45,000 feet** puts SOFIA above **99 percent of Earth's infrared-blocking atmosphere**, allowing astronomers to study the solar system and beyond in ways that are not possible with ground-based telescopes.
- SOFIA is made possible through a partnership between **NASA and the German Space Agency**.
- It has made approximately **800 scientific flights** since it became operational in **2014**.
- SOFIA is designed to **observe the infrared universe**.
 - Many objects in space emit almost all their energy at infrared wavelengths and are often invisible when observed with visible light.

Key discoveries of SOFIA:

- SOFIA has been collecting **data to understand star birth and death and the formation of new solar systems**.
 - It has also been keeping a close eye on planets, comets and asteroids in our solar system, nebulae and galaxies, celestial magnetic fields and black holes at the centre of galaxies.
- In 2020, NASA announced that SOFIA discovered **water molecules (H₂O) on the sun-facing side of the Moon**.



- The site is the **Clavius Crater**, located in the **Moon's southern hemisphere**.
- SOFIA is the **only instrument after Herschel that has the capability of observing singly ionized carbon**, which is now understood to be an important tracer of the molecular gas in the local universe.
- SOFIA also identified **atmospheric circulation patterns in Jupiter**.
- It also mapped the **magnetic field within G47, one of Milky Way's spiral arms**.

NEW 3D PRINTED GLOVES

◎ CONTEXT:

Researchers at Indian Institute of Science (IISc.) have developed customisable, 3D printed gloves can be remotely controlled, opening up the possibility of tele-consultation by physiotherapists.

Need:

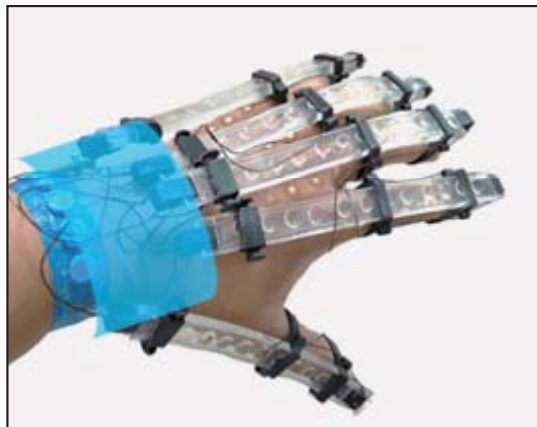
- According to the researchers, stroke is India's third leading cause of death, and the sixth leading cause of disability.
 - **Physiotherapy** is one of the few treatments available for rehabilitating stroke victims and patients with physical injuries, but it can take days to months depending on the severity of the disability, making it challenging for patients as well as their attendants.
- Physiotherapy often requires daily hospital visits.
 - Home visits by professionals or sophisticated devices to monitor patients remotely, although ideal, are not readily available, and are expensive.
 - To address these challenges, the team developed a mechanism by which customisable wearables, like hand gloves, can be designed, 3D printed, and controlled remotely.

How it will help?

- The researchers used a silicon-based polymer material that is transparent (facilitating manipulation of light), soft (for comfort and repeated use), and most importantly, 3D printed.
- It can be customised to fit each patient's arm and fingers.
- The device can capture and store data, and transmit it over the internet, facilitating remote monitoring by clinicians or physiotherapists.

Technology used:

- The technology that drives the device is based on the fundamental properties of light: refraction and reflection.
- A light source is placed at one end of a transparent rubbery material, and the other end has a light detector.
- Any movement in the finger or arm of the patient causes the flexible material to deform.
- The deformation alters the path of light and thereby its properties.
- The device translates this change in light properties to a quantifiable unit.
- Since light travels across the entire length of the device, movement along any part of the patient's finger or arm can be accurately measured.

**About 3D Printing:**

- 3D printing or additive manufacturing uses computer-aided designing to make prototypes or working models of objects by laying down successive layers of materials such as plastic, resin, thermoplastic, metal, fiber or ceramic.
- With the help of software, the model to be printed is first developed by the computer, which then gives instructions to the 3D printer.
- This technology makes use of **CAD (Computer-Aided Design)** or 3D object scanners to take precise measurements of the product to be custom designed.
- Additive Manufacturing has its applications in several industries like defence, automotive industry, surgical equipment's' design segment, etc.

ISRO PLANS MISSION TO VENUS BY DEC. 2024

- © **CONTEXT:** The Indian Space Research Organisation (ISRO) is planning to launch a spacecraft to Venus in December 2024.

Key-objectives of the mission

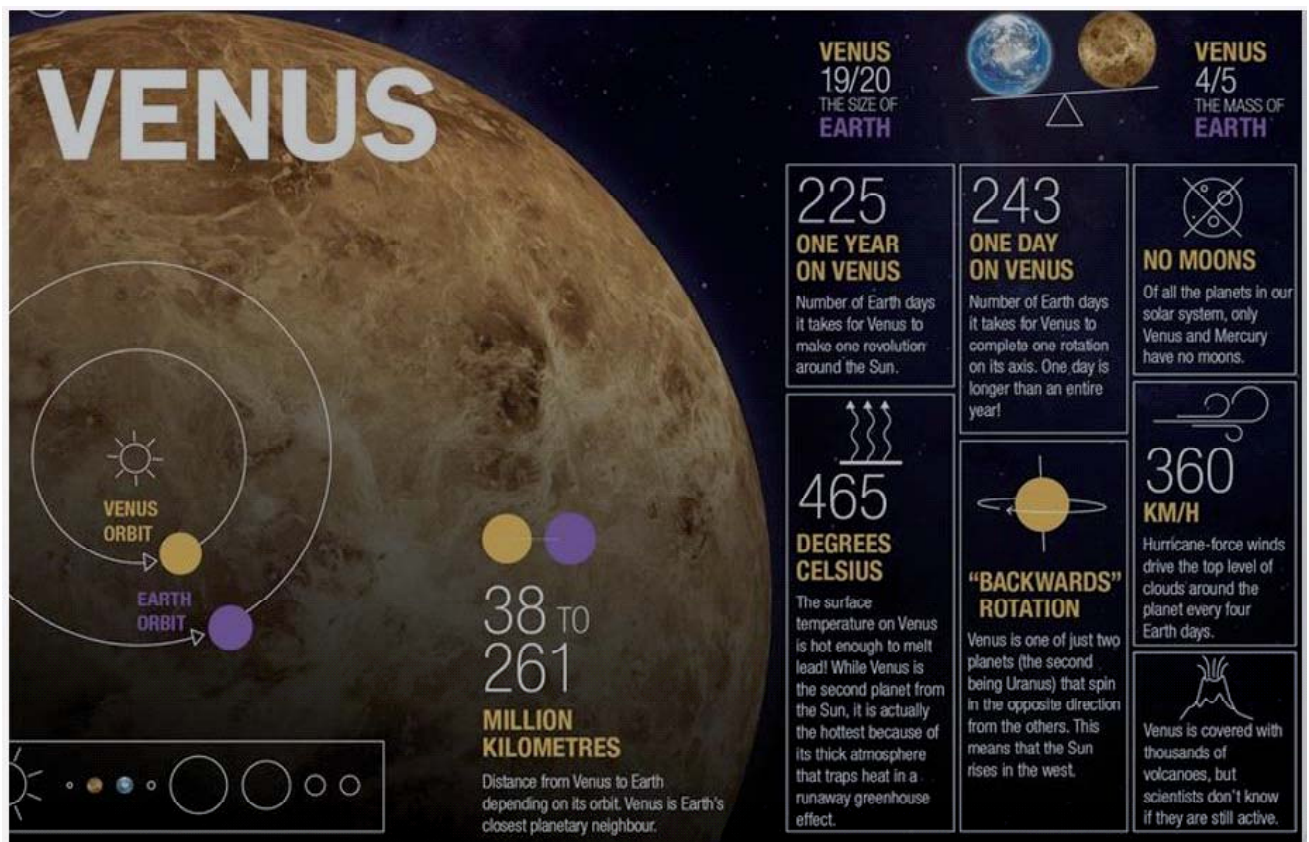
- To study what lies below the surface of Venus.
- To study Venus' atmosphere, which is toxic and corrosive in nature as clouds of sulfuric acid cover the planet

About Venus

- Venus is the second planet from the sun and the hottest planet in the solar system with a surface temperature of 500C – high enough to melt lead.
- The planet's thick atmosphere has cranked the surface pressure up to 90 bars.
- A single Venusian rotation takes 243.0226 Earth days. That means a day lasts longer than a year on Venus, which makes a complete orbit around the sun in 225 Earth days.
- The Venusian planetary core has a diameter of about 4,360 miles (7,000 km), comparable to Earth's core.
- Venus is one of just two planets that rotate from east to west. Only Venus and Uranus have this "backwards" rotation.

Historic missions to Venus

- Magellan – a NASA mission that ended in 1994.
- Venus Express– A European mission- focused on atmospheric science.
- Akatsuki– Japanese spacecraft- focused on atmospheric science.



HOW DID MOON GET ITS WATER? A NEW STUDY

SUGGESTS EARTH'S MAGNETIC FIELD COULD BE INVOLVED

◎ **CONTEXT:** According to a new study, some of the water deposits that scientists believe exist on the moon may have an unexpected source — the atmosphere of Earth.

Key findings of the study:

- Hydrogen and oxygen from Earth combine to form water on the Moon.
- This process may have created up to 3,500 cubic kilometres of surface permafrost (water ice) or subsurface liquid water.
- The **theory has its roots in the earth's magnetic field**, according to the study.
 - As the moon orbits the Earth, it passes through the magnetosphere, a vast comet-sized bubble around the planet created by the earth's magnetic field.
 - It keeps the solar material from entering the earth.
 - Some of Earth's magnetic field lines break and trail off into space for thousands of miles.
 - The magnetosphere vigorously flaps like a flag in the wind in response to the pressure from the solar wind, the expert highlighted.
 - It compresses on the dayside of Earth and stretches into a long tail on the night side.
- The Moon, during its transit, is completely submerged inside the Earth's magnetic field.
- As it passes through the long tail, some of these broken field lines reconnect with their opposing broken counterpart.
- During this time, oxygen and hydrogen ions in the upper parts of the atmosphere (ionosphere), between 80 kilometres and 600 km above the surface, move towards the reconnected lines.
- The presence of water-forming ions as the moon transits through this part of the magnetosphere was established by data from NASA, the European Space Agency, the Japan Aerospace Exploration Agency and the Indian Space Research Organization.
- Some of these ions return to the earth and are likely to fall on the moon.

RARE 'BLACK WIDOW' BINARY STAR WITH SHORTEST ORBIT EVER IDENTIFIED

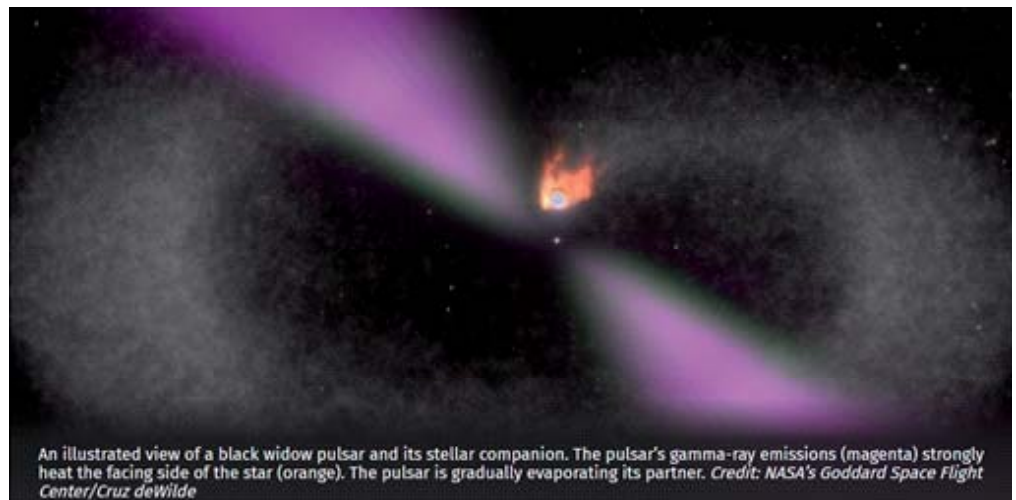
◎ **CONTEXT:** Scientists have discovered a rare "triple black widow" system -- a pair of stars that rapidly circle each other before one is consumed by the other -- located some 3,000 light-years away.

About new discovery:

- A black widow binary is a unique system that consists of a pulsar that is circling and slowly consuming a smaller companion star.
- Astronauts have previously identified about two dozen black widow binaries in the Milky Way galaxy but the newest candidate has the shortest orbital period yet identified.
- Named ZTF J1406+1222, the system has a pulsar and a companion star that circle each

other every 62 minutes.

- The system derives its name from the “black widow” spiders, in which the female eats the male after mating.
- Another thing that makes the system unique apart from the short orbital period is the fact that it seems to host a third far-flung star that orbits the other two every 10,000 years.
- The study used HiPERCAM, a high-speed camera developed by researchers at the University of Sheffield that can take more than 1,000 optical images per second, to find the exotic triple black widow.



Pulsars:

- Pulsars are rapidly spinning neutron stars that are the collapsed cores of massive stars.
- They have an incredibly fast rotational period, spinning around every few milliseconds and emitting flashes of high energy gamma and X-rays while doing so.
- Typically, pulsars spin down and die quickly as they burn huge amounts of energy in a short amount of time.
 - But every once in a while, a passing star can 'refuel' them.
- As a star nears a pulsar, the latter's gravity pulls material off the star, providing new energy to spin the pulsar back up.
- This 'reignited' pulsar then starts reradiating energy that strips the star further until it is completely destroyed.
- Every black widow binary discovered to date was detected due to the gamma and X-ray flashes from the pulsar.
 - But for this system, Burdgeom upon it through the optical flashing of the companion star.

MONKEYPOX, A SMALLPOX-LIKE DISEASE HAS BEEN REPORTED IN THE UK

◎ CONTEXT:

Health authorities in the United Kingdom recently have confirmed a case of monkeypox, a rare viral infection similar to smallpox, in an individual who recently travelled to that country from Nigeria.

Monkey Pox:

- Monkeypox virus is an **orthopoxvirus** that causes a disease with **symptoms similar, but less severe, to smallpox.**
- While **smallpox was eradicated in 1980**, monkeypox continues to occur in countries of **Central and West Africa.**
 - Two distinct clade are identified: the West African clade and the Congo Basin clade, also known as the Central African clade.
- Monkeypox is a **zoonosis**- a disease that is **transmitted from animals to humans.**
- Cases are often found close to **tropical rainforests** where there are animals that carry the virus.
- Evidence of monkeypox virus infection has been found in animals including **squirrels, Gambian poached rats, dormice, different species of monkeys and others.**
- **Detection of viral DNA by polymerase chain reaction (PCR)** is the preferred laboratory test for monkeypox.
 - The best diagnostic specimens are directly from the rash – skin, fluid or crusts, or biopsy where feasible.
 - Antigen and antibody detection methods may not be useful as they do not distinguish between orthopoxviruses.
- **Symptoms:** Monkeypox presents with fever, an extensive characteristic rash and usually swollen lymph nodes.
 - It is important to distinguish monkeypox from other illnesses such as chickenpox, measles, bacterial skin infections, scabies, syphilis and medication-associated allergies.
- According to the WHO, the proportion of patients who die has varied between 0 and 11% in documented cases, and has been higher among young children.



Outbreaks:

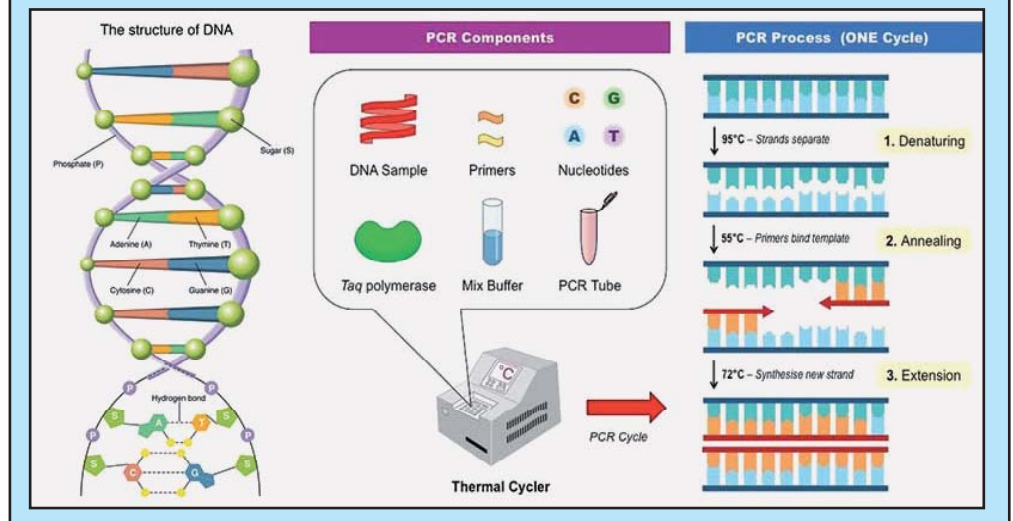
- Human monkeypox was **first identified in humans in 1970** in the Democratic Republic of the **Congo** (then known as Zaire) in a 9-year-old boy in a region where smallpox had been eliminated in 1968.
- Since then, most cases have been reported from rural, rainforest regions of the Congo Basin, particularly in the Democratic Republic of the Congo, where it is considered to

be endemic.

- According to the WHO, **15 countries on four continents** have so far reported confirmed cases of monkeypox in humans.
- Locally acquired cases have been confirmed in the DRC (which has the largest incidence of the infection in the world), Central African Republic, Republic of the Congo, Gabon, Cameroon, Nigeria, Côte d'Ivoire, Liberia, and Sierra Leone.
- **Imported cases have been found in South Sudan and Benin in Africa, and in the United States, UK, Israel, and Singapore.**

PCR (Polymerase Chain Reaction):

- PCR (Polymerase Chain Reaction) is a revolutionary method developed by Kary Mullis in the 1980s.
- PCR is based on using the ability of DNA polymerase to synthesize new strand of DNA complementary to the offered template strand.
- Because DNA polymerase can add a nucleotide only onto a preexisting 3'-OH group, it needs a primer to which it can add the first nucleotide.
- This requirement makes it possible to delineate a specific region of template sequence that the researcher wants to amplify.
- At the end of the PCR reaction, the specific sequence will be accumulated in billions of copies.



SECTION: C
(QUICK FACTS)

PULITZER PRIZE FOR PHOTOJOURNALIST DANISH SIDDIQI

◎ **CONTEXT:** Siddiqui and his colleagues Adnan Abidi, Sanna Irshad Mattoo and Amit Dave from the Reuters news agency won the Pulitzer Prize, for “images of COVID’s toll in India”.

Danish Siddiqui:

- He was on assignment in Afghanistan last year when he died.
- The award-winning journalist was killed in July last while covering clashes between Afghan troops and the Taliban in Spin Boldak district of Kandahar city.
- This is for the second time that Siddiqui has won the Pulitzer Prize.
 - He was honoured with the prestigious award in 2018 as part of the Reuters team for their coverage of the Rohingya crisis.

The Pulitzer Prize:

- The Pulitzer Prizes were established by Joseph Pulitzer, a Hungarian-American journalist and newspaper publisher, who left money to Columbia University upon his death in 1911.
- A portion of his bequest was used to found the School of Journalism in 1912 and establish the Pulitzer Prizes, which were first awarded in 1917.
- There are 22 Pulitzer categories.
 - In 21 of those categories the winners receive a \$15,000 cash award and a certificate.
- Only the winner in the Public Service category of the Journalism competition is awarded a gold medal.
 - The Public Service prize is always awarded to a news organization, not an individual, although an individual may be named in the citation.



SMALL BUTTONQUAIL

◎ **CONTEXT:** There are only two sightings of small buttonquail for the whole of Tamil Nadu, Kerala and Karnataka.

About Small Buttonquail:

- **Turnix sylvaticus** (Small Buttonquail) is a species of birds in the family buttonquails.
- They are native to the **Palaearctic, Asia, and Ethiopia**.
- They are **diurnal omnivores**.
- The small buttonquail is **polyandrous**, which means the male single-handedly shoulders child-rearing responsibilities.

■ Habitat

- Small buttonquail are found on dry sandy soil, in open bush, low scrub, in short grass, and fallow cultivated lands (Jackson, 1926).
- They are found where there is ground cover in which to hide. Suitable ground cover includes dwarf palmetto vegetation, cotton, millet or cassava crops, savanna bush, or stubble fields.
- Bamboo jungle is favored and dense evergreen forests, deserts and wetlands are avoided.



■ Behaviour

- Turnix sylvaticus is considered to be a sedentary species. Subspecies may be locally migratory or nomadic in northwestern India.
- These buttonquail enjoy basking in the sun and dust-bathing.

FUTURE LOOMS DARK FOR 48% OF BIRD SPECIES

© CONTEXT:

The State of the World's Birds, an annual review of environmental resources was recently published.

Key Findings of the Study:

- 48% of the extant bird species are undergoing population decline.

- 13.5% of 10,994 recognised extant species are currently threatened with extinction of which:
 - 9% are Near Threatened
 - 7% are Vulnerable
 - 4% are Endangered
 - 2% are Critically Endangered
 - Alongside tropical forests, natural grasslands emerge as a habitat that is particularly threatened.
 - Threat of natural grasslands has been particularly worrying for North America, Europe and India.
 - It highlights the need for conservation as birds are sensitive indicators of environmental health.
- **Threats:**
- The degradation and loss of natural habitats as well as direct overexploitation of many species are the key threats to avian biodiversity.
 - The use of 37% of the surviving bird species as common or exotic pets and 14% as food are examples of direct overexploitation.

