

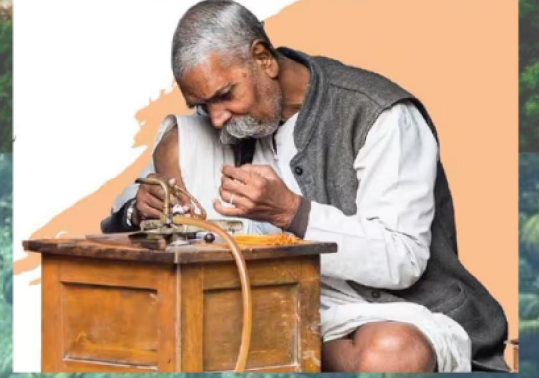
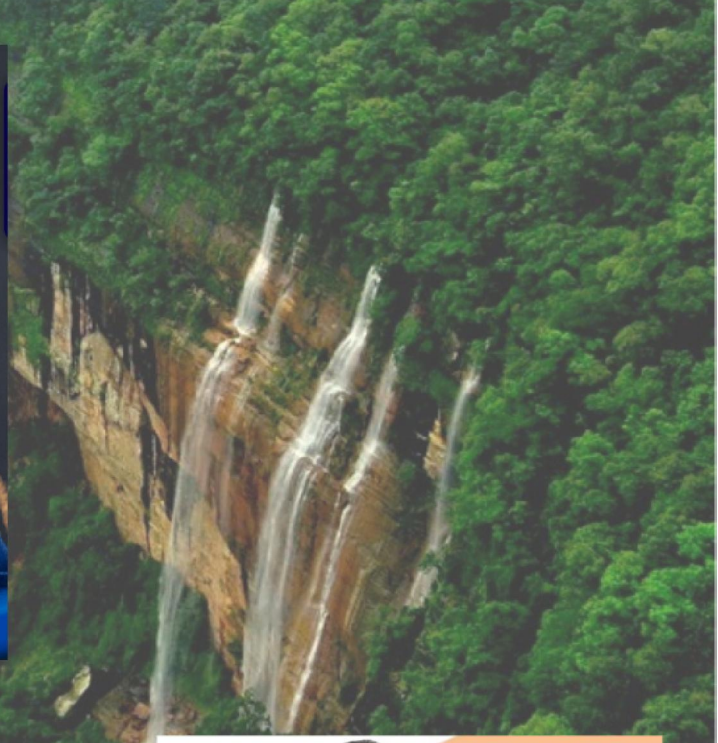


# SURESH'

# 360°

AUGUST - 2023

போட்டித்தேர்விற்கான மாத இதழ்



- **Chess World Cup 2023**
- **Weighing unit made of crystal quartz - Keeladi**
- **Matti Banana**
- **Vishwakarma Yojana**
- **Somatic Genetic Variants**
- **Mahendragiri**





## TNPSC தேர்வுகளில் வெற்றி பெறுவதற்கான முக்கிய ஆலோசனைகள்...

1. தேர்வுகளில் வெற்றி பெறுவதற்காக சாத்தியமாகக் கூடிய கால அட்டவணையை முதலில் தயாரித்து, அதை உறுதியாகப் பின்பற்ற வேண்டும்.
2. TNPSC தேர்வுக்கான பாடத்திட்டம் என்ன என்பதை முழுமையாக அறிந்துகொண்டு, அதில் எந்தப் பகுதியையும் விடாமல் படிக்க வேண்டும்.
3. முதன்மை ஆதாரங்கள் அல்லது நூல்களில் இருந்து **தரமான குறிப்புகளைத் தயாரித்து** வைத்துக்கொள்ள வேண்டும்.
4. TNPSC தேர்வு எழுதுவதற்கான அறிவுத் திறனை அடுத்த நிலைக்கு மேம்படுத்த எஸ்.சி.இ.ஆர்.டி (SCERT) எனப்படும் மாநிலக் கல்வியல் ஆராய்ச்சி மற்றும் பயிற்சி நிறுவனக்குழு தயாரிக்கும் பாட நூல்களில் இருந்து அவற்றின் அடிப்படைத் தத்துவத்தை புரிந்துகொள்ள வேண்டியது மிகவும் முக்கியமாகும்.
5. பாடங்களில் இருந்து எவ்வாறு வினாக்கள் எழுப்பப்படும் என்பதை அறிந்து கொள்வதற்காக அவற்றின் தத்துவங்கள், உண்மைகள் போன்றவற்றை தேர்வுக்கானக் கோணத்தில் இருந்து புரிந்துகொள்ள வேண்டும்.
6. முந்தைய ஆண்டின் வினாக்களை நன்றாகப் படித்து, அவற்றை ஆய்வு செய்ய வேண்டும்.
7. அத்தியாயங்கள் வாரியாகவும், பாடங்கள் வாரியாகவும் பயிற்சித் தேர்வுகளை எழுதிப் பார்க்க வேண்டும். அவ்வாறு செய்வதன் மூலம் உண்மையான தேர்வு எவ்வாறு இருக்கும் என்பது குறித்த அனுபவம் நமக்குக் கிடைப்பதுடன், **தவறுகளைத் திருத்திக் கொண்டு** மேம்படுத்திக் கொள்ளவும் முடியும்.
8. கடந்த ஆண்டுக்கான பொது அறிவு வினாத்தாள்களுக்கு விடை அளிக்க முயற்சி செய்ய வேண்டும். **உங்களின் பலவீனம் என்ன என்பதை தெரிந்து கொள்ள** அது உதவும். நீங்கள் எந்த அளவிற்குத் தேர்வுக்கு தயாராக இருக்கிறீர்கள்? உங்களின் அறிவுத் திறன், விடை அளிக்கும் வேகம், துல்லியம் ஆகியவற்றை அளவிடுவதற்கும் இது உதவும்.
9. பாடங்களை ஒருமுறையாவது திருப்புதல் **செய்து பார்ப்பது கட்டாயம் ஆகும்.**
10. அனைத்துப் பாடங்களையும் ஒருமுறை திருப்புதல் செய்து பார்ப்பதும், தயார் செய்து வைக்கப்பட்டுள்ள குறிப்புகளை மூன்றாவது முறையில் படித்துப் பார்ப்பதும் சிறப்பாகும்.
11. தேர்வுக்கு முந்தைய ஒரு மாதத்தில் புதிய பாடங்களைப் படித்து ஆராய ஒருபோதும் முயற்சி செய்ய வேண்டாம். அந்த ஒரு மாதமும் ஏற்கனவே படித்த பாடங்களைத் திருப்புதல் செய்து பார்ப்பதற்கு மட்டுமே ஒதுக்கப்பட வேண்டும். அந்த ஒரு மாதம் முழுவதும் திருப்புதல், திருப்புதல், திருப்புதல் என்பதே மந்திரமாக இருக்க வேண்டும்.
12. **செய்திகளையும், நாட்டு நடப்புகளையும் தொடர்ச்சியாகப் படித்து வரவேண்டும்.** பாடங்களையும், தேசிய மற்றும் சர்வதேச நிகழ்வுகளையும் நன்கு அறிந்துகொள்ள வேண்டும்.
13. **அடுத்த நாள் தேர்வு நடக்க இருப்பதாகக் கருதிக் கொண்டு** அதற்கேற்ற வகையில் தேர்வுக்குத் தயாராகுவதற்கான உத்தி வகுக்கப்பட வேண்டும். அந்த அளவுக்கான தயாரிப்பு அவசியமாகும்.
14. ஒவ்வொரு நாளும் **உறங்கச் செல்வதற்கு முன் அந்த நாள் முழுவதும் படித்த பாடங்களை ஒருமுறை நினைவுபடுத்திக் கொள்ள வேண்டும்.** அது உங்களின் நினைவுத் திறனை வலுப்படுத்தும்.
15. முதல்நிலைத் தேர்வுக்கான பொது அறிவு முதல் தாளுக்கான தயாரிப்பு முதன்மைத் தேர்வையும் மனதில் கொண்டு தொடரப்பட வேண்டும்.



Competitive Exam Monthly Magazine

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## I. Profile of State

### Meghalaya

- Meghalaya is a hilly area in northeast India. Shillong is the state capital. During British rule, the state was known as 'East Scotland,' Previously, Meghalaya was a part of Assam, but on January 21, 1972, the Garo, Khasi, and Jaintia hills were brought together to form a new state.

#### State Bird – Hill Myna

- Scientific name – *Graculareligiosa*



- The bird is known for its extensive array of calls as it can emit countless screams, squeaks, chirps, and whistles. But due to their unique ability to mimic sounds, these unique birds are being threatened by their popularity in the cage bird trade.

#### State flower- Lady Slipper Orchid

- The lady slipper orchids are

outstanding decorative flowers that effortlessly provide splendour to any space. But they are more than just beautiful flowers.



- Scientific name – *Paphiopedilum insigne*
- These orchids, in particular, are used as a remedy for controlling anxiety, hysteria, insomnia, depression, and tension headaches.
- Lady slipper orchids are rare and very difficult to grow compared to other popular orchid species. Nevertheless, they continue to be a popular choice among many orchid and plant lovers.

#### State Animal- Clouded Leopard

- Zoological Name – *Neofelis nebulosa*
- The animal gets its name from

the mesmerising spots on its skin which give it a cloudy appearance, enabling them to easily camouflage in the environment.

- Meghalaya's state animal, the clouded leopard, is unfortunately listed as an endangered species by the IUCN (International Union for Conservation of Nature).



#### State Tree- Gamhar

- Scientific name – *Gmelina arborea*
- Common names – Kashmir tree or Beechwood tree
- The gamhar is a deciduous tree, which grows naturally throughout the greater part of India at altitudes up to 1,500 metres.
- Being a medicinal tree, every single part of it – roots, stem, bark, fruits, leaves, and flowers- has been used for medicinal purposes in India for a long time. Its reference can be

found in all the classic texts of Ayurveda.



- **Forest cover :**
- As Meghalaya mainly consists of subtropical forests, seventy percent of the state is covered with trees. Also, the forest in the mountain is different from the lowland tropical forests found in the north and the south. Meghalaya's forests are remarkable for their diverse range of mammals, birds, and plants. Hence, we have some exotic animals and birds like the clouded leopard and the hill myna as the state's symbols.

### Languages

- English is the official language of the state.[50] The most spoken languages in Meghalaya are Khasi (33.82%) and Garo (31.60%)

### Geography

- Meghalaya is mountainous, and it is the rainiest state of India. The word Meghalaya means, "abode of the clouds".
- Meghalaya is one of the Seven Sister States of northeast India. The state of Meghalaya is mountainous, with stretches of valley and highland plateaus, and it is geologically rich

### Population

- Tribal people make up the majority of Meghalaya's population. The Khasis are the largest group, followed by the Garos then the Jaintias. These were among those known to the British as "hill tribes." Other groups include the Bengali, Hajongs, the Biates, the Koches and related Rajbongshis, the Boros, Dimasa, Kuki, Lakhar, Tiwa (Lalung), Karbi, Rabha and Nepali.[citation needed]

### Languages

- English is the official language of the state.[50] The most spoken languages in Meghalaya are Khasi and Garo

### Agriculture

- Meghalaya is basically an agricultural state with about 80% of its population depending entirely on agriculture for their livelihood. Nearly 10% of the geographical area of Meghalaya is under cultivation. Most of the population engaged in agriculture remain poor. A portion of the cultivated area is under the traditional shifting agriculture known locally as Jhum cultivation

### Minerals

- Meghalaya has a rich base of natural resources. These include minerals such as coal, limestone, sillimanite, Kaolin and granite among others.

### Forest cover

- Meghalaya has a large forest cover, rich biodiversity, and numerous water bodies. The low level of industrialisation and the relatively poor infrastructure base acts as an impediment to the exploitation of these natural resources in the interest of the state's economy.

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## II. National Symbol

### National Emblem

#### Why in news?

- The Prime Minister of India unveiled the 6.5 metre-tall national emblem on top of the under construction new parliament building.

### Facts about National Emblem

- The Ashoka pillar erected by Emperor Ashoka, has four lions seated back to back which imply power, Courage, confidence and pride.
- The Elephant denotes Buddha's outset (the dream of a white

- Elephant entering her womb dreamt by Buddha's mother at the time of Buddha's conception)
- The bull symbolizes zodiac sign of Buddha-Taurus.
- The horse signifies Buddha's horse, which he rode at the time of departing from the citadel.



- The lion indicates enlightenment.
- All the Ashoka pillars were carved by craftsmen from the same area using stone from Chunar and Mathura.

<b>What is the name of the Indian national emblem?</b>	National emblem of India is called as it is called the State emblem.
<b>National emblem of India has been adapted from?</b>	Sarnath lion capital of Ashoka. It was Adopted on 26th January 1950, the day Indian Constitution came into force.
<b>How many animals?</b>	Four different animals: Asiatic lion, Elephant, Bull, and horse. The numbers are: Four Asiatic lions and one each of elephant, Horse, and a Bull.
<b>Who designed?</b>	Dinanath Bhargava sketched and illuminated India's National Emblem.
<b>Ashoka Chakra rignity?</b>	It is a symbol of Buddhist dharma chakra represented with 24 spokes.

- Each pillar is around 40 to 50 feet in height, and weighing up to 50 tons each, were pulled to where they were raised.
- Only six pillars with animal capitals and nineteen pillars persist with inscriptions.
- The engravings on the pillars described proclamation about morality grounded on Buddhist doctrines.
- The slogan "Satyameva jayate" the truth alone Triumphs is

engraved below the National emblem.

- Slogan 'Satyameva Jayate' is a quote from the mundaka upanishad.
- National emblem is the official seal of president of India and Central and State Governments and an inevitable part of the official letter head of the Government of India.
- IPS officers wear the State emblem on their caps.
- MPs can also use the State emblem on their letter heads and visiting cards.
- There is a punishment of imprisonment of upto two years or a fine upto INR 2000 if someone violates the law concerning the usage of the National Emblem.

#### Do you know?

- Dinanath Bhargava is believed to visit Alipore zoo in Kolkata to see a lion before he depicts the same on paper.

## III. Eminent Person's and Places, Sports, Awards

### 1. Eminent Person's and Places

#### Epigraphist S. Rasu (85)

- An Epigraphist, archaeologist and Tamil scholar 'Pulavar' S Rasu passed away in Coimbatore.
- He born in 1938 at Vellode in Chennimalai union near Erode.
- Pulavar S. Rasu identified Kodumanal village as the one mentioned as
- 'Kodumanam' as inscribed in Padhitrupathu of Sangam literature.
- Following his identification, excavations began for the first time in 1985.
- It brought to light two cultural periods – megalithic and early historic.
- The Tamil Nadu government

had in 2012 presented the U.V. Swaminatha Iyer Award to the poet for his contribution as Tamil scholar.

#### Statistical scientist CR Rao

- The world's most eminent statistician Calyampudi Radhakrishnan Rao (102) passed away.

- He taught and researched at the Indian Statistical Institute (ISI), Kolkata.
- He was also a member of several government committees for the development of national statistical systems, statistical education and research in India.
- He served as
  - Chairman of the Committee on Statistics (1962-69),
  - Chairman of the Demographic and Communication for Population Control (1968-69),
  - Chairman of the Committee on Mathematics, Atomic Energy Commission, AEC (1969-78),
  - Member of the Committee on Science and Technology, COST (1969-71).
- He was awarded India's highest honours the Padma Bhushan and Padma Vibhushan in 1969 and 2001, respectively.

## 2. Sports

### **Gukesh D Overtakes ViswanathanAnand in FIDE Rankings**

- Gukesh D, a protege of five-time world chess champion ViswanathanAnand, will become the top-ranked Indian in the International Chess Federation (FIDE) monthly rating list for classical chess, surpassing Anand after 36 years. He will also break into the top 10 rankings for the first time, making him the third Indian to achieve this feat.
- He became the youngest player to defeat World No. 1 chess player, Magnus Carlsen.
- FIDE is the governing body of the sport of chess, and it regulates all international chess competitions. It's constituted as a non-governmental institution.



### ViswanathanAnand

- The most successful Indian chess player, who won the FIDE World Chess Championship in 2000, 2007, 2008, 2010 and 2012.
- He also won the World Rapid Chess Championship in 2003 and 2017, and the World Blitz Chess Championship in 2000 and 2017. He is the only player to have won the world title in all three formats of chess.

### **India's first-ever Gold Medal at the World Archery Championship**

- Recently, the Prime Minister extended congratulations to the Indian women's compound team comprising JyothiSurrekhaVennam, ParneetKaur, and AditiGopichand Swami, for securing India's inaugural Gold medal at the World Archery Championship in Berlin.
- AditiGopichand Swami became the youngest-ever senior world champion and the first Indian to win an individual compound gold medal at the World Ar-

chery Championships at the age of 17.

- World Archery is the international federation for the Olympic and Paralympic sport of archery.
- The organization was founded in 1931 and is responsible for regulating and promoting archery around the world.
- World Archery is based in the Olympic capital of Lausanne, Switzerland.

### **Norseman Xtreme Triathlon**

- The 2023 edition of the Norseman Xtreme Triathlon took place on August 5th at Norway with 290 athletes from 35 countries taking part in the race.
- Norseman Xtreme Triathlon is one of the most challenging and prestigious endurance events in the world. It is a long-distance triathlon that consists of a 3.8 km swim, a 180 km bike ride, and a 42.2 km run, with a total elevation gain of 5,230 meters.



- The race starts with a jump from a ferry into the cold waters of the Hardangerfjord, and ends at the summit of Mount Gaustatoppen, one of the highest peaks in Norway.



### **UWW Suspends of Wrestling Federation of India**

- The Wrestling Federation of India (WFI), the national governing body for wrestling, has been provisionally suspended by the United World Wrestling (UWW), for not conducting its elections on time.
- This has serious implications for the Indian wrestlers, who will not be able to compete under the national flag in the upcoming World Championships in Serbia.

### **WFI Suspended by UWW**

- The UWW has suspended the WFI for violating its constitution, which mandates that all member federations must hold their elections every four years.
- The WFI was supposed to hold its elections in February 2023, but they were delayed due to various reasons, including allegations of sexual harassment, intimidation, financial irregularities, and administrative lapse against the former WFI

president and others by some prominent wrestlers.

- The UWW also wanted to protect the athletes and make the federation work properly again.

### **Durand Cup 2023**

- The Durand Football Tournament was started at Shimla in 1888 by Sir Henry Mortimer Durand, who was the Foreign Secretary to the Govt of India.
- Durand is the third oldest football tournament in the world and the oldest in Asia and India.
- The ongoing 132nd edition (3rd August to 3rd September 2023) is organized by India's Armed Forces.
- The tournament format comprises two stages: the group stage and the knockout rounds.
- The Durand Cup tournament is unique wherein the winning team walks away with three trophies, i.e. the Durand Cup the Shimla Trophy and the President's Cup

### **Neeraj Chopra Clinches Gold in World Athletics Championships 2023**

- Indian athlete Neeraj Chopra has once again etched his name in history, seizing the gold medal in the men's javelin throw event at the 2023 World Athletics Championships in Budapest, Hungary. He achieved a remarkable throw of 88.17m.
- Before his recent victory in Budapest, Neeraj Chopra had already claimed the distinction

of being the first Indian track and field athlete to clinch gold at the Olympics (Tokyo 2020), secure the Diamond League title (2022), and conquer the junior world championships (2016).



### **Chess World Cup 2023**

- Grandmaster Rameshbabu-Praggnanandhaa wins over World No. 3 FabianoCaruana in the tie-breaker round of the World Cup 2023, chess tournament at Baku, Azerbaijan.
- The World Cup 2023 is organised by the International Chess Federation (FIDE), the governing body of chess in the world.
- Praggnanandhaa, the youngest Indian grandmaster and the youngest international master is among the most promising talents in the world of chess.
- He achieved significant victories such as winning the World Youth Chess Championship (under-18) in 2019 and emerging victorious in the Asian Continental Chess Championship (open) in 2021.

### **Spain Clinches Women FIFA World Cup 2023**

- The Women FIFA World Cup

2023 jointly hosted by Australia and New Zealand, featuring 32 teams concluded recently.

- The final match was held on 20 August 2023 where Spain defeated England 1-0 to lift their first-ever World Cup trophy. With this win, Spain also became only the second nation to clinch both the men's and the women's World Cups after Germany.
- The competition has seen four past champions: USA, Germany, Japan and Norway.

### **World University Games**

- Recently, the 31st World University Game was held in Chengdu, China, where India has won a total of 26 medals across 4 disciplines with highest medal count at the World University Games.
- It had to be held in 2021, the World University Games had to be rescheduled twice due to the Covid-19 pandemic.
- The University games is held every two years and features a wide range of sports similar to the Olympic Games.
- It includes both summer and winter editions,
- With the summer Universiade typically featuring sports like athletics, swimming, basketball, soccer, and more,
- While the winter Universiade includes sports like skiing, ice

hockey, figure skating, and others.

#### **Previous Edition:**

- The previous edition, held in Naples in 2019, Japan securing the highest position on the medal table.

#### **Future Events:**

- Next Winter World University Games will be held in 2025 in Rhine-Ruhr, Germany.

### **ISSF Junior World Championships 2023**

- The ISSF Junior World Championships 2023 was held in Republic of Korea.
- India's contingent of 90 shooters for the 2023 junior world championships was the largest, followed by Korea's squad of 66.
- India finished with 17 medals- six gold, six silver and five bronze at the event.
- Seven Indians managed to bag more than one medal.
- Sainyam won three medals.
- Abhinav Shaw and Kamaljeet won two golds each.
- India, with 43 medals including 17 golds, had topped the medals tally at the last junior world championships held in Lima, Peru, two years back.

### **Asian Champions Trophy 2023**

- International Hockey Federation handed over the Pass the

Ball Trophy to TN Chief Minister.

- The 7th edition of the men's Asian Champions Trophy hockey tournament is taking place in Chennai from August 3.
- It was instituted in 2011.
- This city holds the tournament after a gap of 15 years.
- India, South Korea, Malaysia, Japan, Pakistan and China's teams are participating.
- India and Pakistan have lifted the trophy three times each.
- While India emerged champions in 2011 and 2016, Pakistan won it in 2012 and 2013.

### **New members to join World Boxing**

- The World Boxing is a new body which is seeking International Olympic Committee (IOC) recognition to run the sport.
- The national federations of Canada, Brazil, Argentina, Germany, Honduras and Sweden joined the body newly.
- It was bringing the total number of members to 12.
- New Zealand, Australia, England, Great Britain, the Dutch and the United States are already members.
- The IOC has stripped the recognition of the Russian-led International Boxing Association over its failure to meet a set of governance, financial and sports reforms.

### 3. Awards

#### First 'Udyog Ratna' award

- The Maharashtra government has taken the decision to introduce the prestigious Udyog Ratna Award starting this year.
- The state honoured Ratan Tata, the Chairman of the Tata group, with the first esteemed Maharashtra Udyog Ratna Award.
- This is the highest state honor presented to distinguished individuals by the state.



- Just like the Maharashtra Bhushan award, it is also presented to distinguished persons.
- Ratan Tata has also been honoured with two of India's most prestigious civilian awards: the Padma Vibhushan in 2008 and the Padma Bhushan in 2000.

#### Lokmanya Tilak National Award 2023

- PM was conferred with the Lokmanya Tilak National Award after the inauguration of various projects.
- He is the 41st recipient of the award.
- The award is conferred on people to honour the legacy of

Indian independence activist, Bal Gangadhar Tilak.

- The award was constituted by Tilak Smarak Mandir Trust in 1983.
- It is given to people who have worked for the progress and development of the nation and whose contribution can only be looked upon as remarkable and extraordinary.
- The award is presented every year on August 1, which is the death anniversary of Bal Gangadhar Tilak.



- Last year, the Lokmanya Tilak National Award was conferred upon senior scientist Tessy

Thomas, popularly known as India's "missile woman."

#### 69th National Film Awards 2023



- The 69th National Film Awards were announced recently
- The National Film Awards, held annually, are to honor the stream of Indian cinema.
- The National Film Awards are organized by the Directorate of Film Festivals, under the Union Ministry of Information and Broadcasting.
- The National Film Awards were started in 1954 in the name of State Awards.

#### Swachh Vayu Sarvekshan - 2023

Rank	Population Category	City
1st	> 10 lakhs	Indore
2nd	> 10 lakhs	Agra
3rd	> 10 lakhs	Thane
4th	> 10 lakhs	Srinagar
5th	> 10 lakhs	Bhopal

- Indore has secured first position in Swachh Vayu Sarvekshan-2023, conducted by the Central Pollution Control Board.
- It is followed by Agra, Thane, Srinagar and Bhopal.

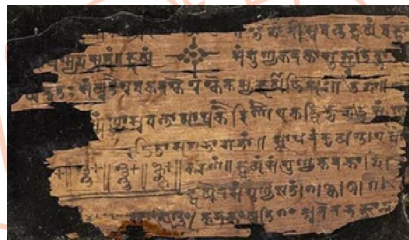


## IV. HISTORY - Historical Events

### National Manuscripts Bill 2023

- India's rich cultural heritage is encapsulated in its ancient manuscripts, which hold invaluable knowledge and historical significance. However, the loss and dispersal of many of these manuscripts, even beyond the country's borders, have raised concerns. In a significant move, the Indian government is gearing up to address this issue through the introduction of the National Manuscripts Bill, 2023.
- The primary objectives of the Bill include documenting and cataloguing Indian heritage texts worldwide, maintaining accurate information, and specifying consultation conditions.
- The bill proposes the establishment of a 10-member National Manuscripts Authority (NMA), chaired by the Culture Minister and including representatives from Culture, Finance, Education, and private agencies.
- The NMA will oversee digitization, conservation, preservation, editing, and publication of manuscripts.
- The NMA will possess civil court powers to regulate manuscript access, investigate thefts, and ensure protection against damage or theft.
- The NMA can acquire manuscripts from private owners based on content importance,

- with compensation determined by an expert committee.
- Manuscripts is a handwritten composition on materials like palm leaf, paper, cloth, and bark, in Sanskrit and regional languages, dating back at least 75 years.
- India possesses approximately 10 million manuscripts in 80 ancient scripts, with the National Mission for Manuscripts (NMM) responsible for preservation.
- The Bakhshali manuscript, an ancient mathematical text, showcases the early use of zero and dates back to the third or fourth century A.D.



### Mylara Cult

- The discovery of two ancient sculptures in Basrur, Karnataka, has led to the revelation that the Mylara cult existed in the coastal region.
- Two sculptures resembling those from the 15th and 17th centuries were found in Basrur (historical trading city of the Medieval period).
- A unique sculpture depicting a royal hero sitting on a horse holding a sword and a bowl was found in a well.

- Another stone tablet containing Mylara and Mylaladevi sitting on an ornate horse and holding swords was found in a tank.
- The Mylara cult was a religious tradition in the Deccan region during the medieval period.
- The cult is centered around the worship of a goddess named Mylara, believed to be a form of Lord Shiva.



### Foundation stone for Adichanallur museum

- Union Finance Minister Nirmala Sitharaman lays foundation stone for Adichanallur museum.
- This is the first onsite archaeological museum in the country.
- It will exhibit 3,000-year-old artefacts.
- An excavation by the Archaeological Survey of India, in Adichanallur in Thoothukudi district, has unearthed a number of burial urns, metal and bronze products and even a gold diadem.
- Though an excavation in Adichanallur was taken up in 1876 itself, it has been realized today after 145 years.



### Tamil manuscripts from Italy

- Palm manuscripts from the 18th Century titled Gnanamuyarchi have been discovered in an Armenian monastery in Northern Italy.
- Tamil Bharathan, a doctoral scholar, was allowed access to the manuscripts.
- It could be a copy of the first translation of Ignatius' Spiritual Exercise in Tamil.
- This translation is most likely by Michele Bertoldi, known in Tamil as Gnanaprakasasamy.
- This is a prose text from the early 18th Century (likely the 1720s).
- It has been printed several times in the 19th Century by the Mission Press in Puducherry.
- The library had categorised the manuscripts as 'Indian Papyrus Lamulic Language—XIII Century'.

### Bharathiyar Mandapam

- President Droupadi Murmu unveiled a portrait of nationalist Tamil poet-journalist Subramania Bharathi at the Raj Bhavan, Chennai.
- She also renamed the Durbar Hall on the campus as 'Bharathiar Mandapam'.

### Weighing unit made of crystal quartz - Keeladi

- A weighing unit made of crystal quartz was found in the 9th phase of the excavations in Keeladi.
- It was the first time a crystal quartz had been unearthed in Keeladi since 2014.
- It is transparent in nature.
- It is black-and-red ware and red slipped ware.
- The excavation also yielded a fragment of a snake figurine made of terracotta.
- It is located in Sivagangai District dates from the Sangam-Era site near Madurai.
- The archaeological excavations in Tamil Nadu threw up the following surprises
- Artefacts unearthed in Keeladi near Madurai pushed the Sangam Era to 600 BCE from 300 BCE



- Rice husks found in a burial urn in Sivakalai was found to be 3,200 years old
- Tamils were aware of iron technology in 2172 BCE, 4,200 years ago.

### Porpanai kottai – circular brick structure

- A portion of a circular brick structure has been unearthed

by archaeologists at Porpanai-kottai

- It is a Sangam-age site in Pudukkottai district.
- Potsherds, comprising glazed ware, blackware, black and red ware, roof tiles, perforated ware and three pieces of rouletted ware, a distinctive type of decorated pottery, have also been found.



- A hopscotch made of rouletted ware is a rare and important find.
- A Sangam-age fort is believed to have existed here.
- A habitation mound, spread over 1.26 hectares, is believed to have existed within the fort.

### Megalithic hat stones

- A large number of megalithic hat stones were found from a single site during a recent archaeological salvage excavation at Nagaparamba in Kuttippuram village of Kerala.
- Hat stones are popularly called Thoppikkallu in Malayalam.
- They are hemispherical laterite stones used as lid on burial urns during the megalithic period.
- It could ostensibly throw light on the life and culture of people who lived in those parts more than 2,000 years ago.

## V. Polity - Political Parties and Political system in India

### Sub-Categorisation of OBCs

- The Justice G. Rohini-headed Commission for the sub-categorisation of Other Backward Classes (OBC) caste groups submitted its long-awaited report to the Ministry of Social Justice and Empowerment after nearly six years of work.
- The details of the recommendations have not been made public yet, and the government is expected to deliberate on the report before any implementation.

### Terms of Reference of the Rohini Commission

- The commission was set up on 2nd October, 2017 under Article 340 of the Constitution (President's power to appoint a Commission to investigate the conditions of the backward classes).

### Terms of Reference:

- Examine the inequitable distribution of benefits among OBCs listed in the Central List.
- Propose a scientific approach and parameters for sub-categorisation within OBCs.
- Identify and classify the respective castes or communities into their respective sub-categories.
- Study the entries in the Central List of OBCs and recommend corrections for repetitions,

ambiguities, inconsistencies, and errors in spelling or transcription.

### Need for Sub-categorisation of OBCs

- OBCs get 27% reservation in central government jobs and educational institutions, but it is perceived that only a few dominant caste groups among them benefit from this quota.
- In 2018, the commission analyzed the data of 1.3 lakh central government jobs and OBC admissions to central higher education institutions over the preceding years, revealing that 97% of benefits went to 25% of OBC castes.
- Around 983 OBC communities (37% of the total) had zero representation in jobs and educational institutions, highlighting the need for sub-categorisation.
- Sub-categorisation aims to create quotas within the 27% reservation to provide more opportunities for historically underrepresented and crowded-out OBC communities.

### MASI: Revolutionizing Child Care Institution Oversight

- Recently, the Ministry of Women and Child Development provided valuable insights into the MASI Portal during a written reply in the Rajya Sabha.

- The National Commission for Protection of Child Rights (NCP-CR) has introduced an application named 'MASI' - Monitoring App for Seamless Inspection.
- Developed to enhance the real-time monitoring of Child Care Institutions (CCIs) and their inspection processes across India, this app has emerged from the need to effectively manage inspections mandated by the Juvenile Justice Act, 2015.
- It allows unified inspections by various authorities, including Child Welfare Committees (CWCs), State Inspection Committees, Juvenile Justice Boards (JJBs), and State Commissions for Protection of Child Rights (SCPCRs).

### OBC Reservation in Local Bodies

- Recently, the state government of Gujarat hiked reservations for Other Backward Classes (OBCs) from the existing 10% to 27% in the panchayats and urban local bodies.

### Key Points about this Decision:

- The decision followed recommendations of the Justice K. S Jhaveri Commission that was formed in response to a Supreme Court (SC) directive in 2022 to make suggestions for OBC reservation in local bodies in Gujarat.



- The expanded 27% OBC reservation will apply to all levels of local bodies (municipal corporations, municipalities, gram panchayats, talukapanchayats, and district panchayats).
- The increased OBC reservation, however, will not be applicable in areas covered by the PESA Act 1996 where the scheduled tribe (ST) population exceeds 50%. In such regions, OBC candidates will receive a 10% reservation.
- The existing quota for SCs (14%) and STs (7%) remains unchanged without any breach of the 50% reservation ceiling as mandated by the SC.

### **Performance of the Fast Track Special Court**

#### **Fast Track Special Courts (FTSCs):**

- FTSCs are dedicated courts expected to ensure swift dispensation of justice. They have a better clearance rate as compared to the regular courts and hold speedy trials.
- In 2019, the government approved a scheme for setting up 1,023 FTSCs across the country for expeditious disposal of pending rape cases under the Indian Penal Code (IPC) and crimes under the POCSO Act.
- It also strengthens the deterrence framework for sexual offenders.

#### **Performance:**

- As of June 2023, the FTSCs have successfully disposed of more than 1.74 lakh cases

related to rape and POCSO Act.

- This reflects the significant impact of these specialized courts in providing speedy justice to the victims of sexual offences.
- 763 FTSCs are currently functional across 29 States and Union Territories.
- Among these, 412 courts are exclusive POCSO Courts.

#### **Challenges Related to Fast Track Special Court**

- Inadequate Infrastructure and Low Disposal Rate:

#### **Limited Jurisdiction:**

- Vacancies and Lack of Training
- Prioritization of Certain Offences Over Others

#### **Public Declarations Not Necessary for Marriages: Supreme Court**

- Recently, the Supreme Court has declared that not all marriages necessitate a public declaration or solemnization. Also, the court approved a Tamil Nadu law that allowed "self-respect" marriages and affirmed that lawyers can officiate at 'self-respect marriages' between consenting adults.
- Through a state amendment in 1967, Section 7-A of the Hindu Marriage Act, applicable to Tamil Nadu, provides legal recognition to self-respect or reformist marriages among Hindus.
- These marriages can be solemnized in the presence of relatives, friends, or other in-

dividuals and allow couples to marry without a formal public ceremony and empower advocates to conduct such unions in private settings.

- The court's ruling upholds an individual's right to choose a life partner without external interference, in accordance with Article 21 of the Indian Constitution.
- Solemnizing marriage without a Brahmin priest was the prime objective of the Self Respect Movement started by E.V. RamaswamyNaicker (Periyar) in 1925.

#### **Missing Public Information on RTI Online Portal**

- The Union government's RTI Online portal has encountered a situation where a significant amount of public information, including past applications and responses, has gone missing.
- The portal is undergoing maintenance with the aim of restoring the vanished archival data. This incident underscores the challenges associated with upholding accountability within the framework of the RTI Act.

#### **Right to Information (RTI) Act**

- The Right to Information (RTI) Act is a legislative framework that empowers Indian citizens to access information held by public authorities. Enacted in 2005, the act aims to promote transparency, accountability, and participation in government processes.

- It replaced the Freedom of Information Act 2002.

### What are the Recent Amendments in the RTI Act?

- Amendment in 2023: Recently, section 44 (3) of the Digital Personal Data Protection Act 2023 modified Section 8 (1)(j) of the RTI Act, creating an exemption for all personal information from disclosure and removing the previously established exceptions that permitted the release of such information.

### Advisory Board on Banking and Financial Frauds

- The Central Vigilance Commission (CVC) has reconstituted the Advisory Board on Banking and Financial Frauds (ABBFF) to fortify the examination of bank fraud cases, the Advisory Board on Banking and Financial Frauds (ABBFF)

#### About:

- ABBFF serves as the first-level examination body for bank fraud cases before they are referred to investigative agencies like the Central Bureau of Investigation (CBI).
- ABBFF is empowered to conduct periodic fraud analysis within the financial system.
- It offers insights and policy recommendations related to fraud prevention and management to regulatory bodies like the Reserve Bank of India (RBI) and CVC.

#### Omission of "Sun Set Clause":

- Notably, the concept of a

"sunset clause," which could have limited actions against bankers for credit decisions after a specified period, has not been included in ABBFF's functioning.

### National Judicial Data Grid

- Recently, the National Judicial Data Grid (NJDG) has gained significant attention for its role in revolutionizing the way judicial proceedings are managed in India.

#### About:

- NJDG is a database of orders, judgments and case details of 18,735 District & Subordinate Courts and High Courts created as an online platform under the eCourts Project.
- Data is updated on a near real-time basis by the connected District and Taluka courts. It provides data relating to judicial proceedings/decisions of all computerized district and subordinate courts of the country.
- All High Courts have also joined the NJDG through web services, providing easy access facility to the litigant public.

#### Features:

- Aligned with the National Data Sharing and Accessibility Policy (NDSAP), NJDG provides an Open Application Programming Interface (API) to Central & State Governments.
- This API offers streamlined access to NJDG data using designated departmental IDs and access keys.

- This feature is intended for institutional litigants to evaluate and monitor cases, with plans to extend access to non-institutional litigants in the future.

#### Significance:

- NJDG works as a monitoring tool to identify, manage & reduce pendency of cases.
- It helps to provide timely inputs for making policy decisions to reduce delays in disposing of cases and helps in reducing case pendency.
- It also facilitates better monitoring of court performance and systemic bottlenecks, and, thus, serves as an efficient resource management tool.
- To track cases related to land disputes, Land Records data of 26 States have been linked with NJDG.

### Supreme Court Allows Termination of Pregnancy for Rape Survivor

- Observing that pregnancy outside marriage, especially in cases of sexual assault, is injurious and a cause of stress, the Supreme Court of India allowed a rape survivor from Gujarat to terminate her 27-week pregnancy.
- The court overruled the Gujarat High Court's order that denied her request and directed the hospital to carry out the procedure without any delay.
- Under the Medical Termination of Pregnancy (MTP) Amendment Act 2021, the upper limit

for termination of pregnancy is 24 weeks.

### Legal Provisions Related to Abortion in India

- Until the 1960s, abortion was prohibited in India, and violating this led to imprisonment or fines under Section 312 of the Indian Penal Code.
- The Shantilal Shah Committee was set up in the mid-1960s to investigate the need for abortion regulations.
- Based on its findings, the Medical Termination of Pregnancy (MTP) Act, 1971 was enacted, allowing safe and legal abortions, safeguarding women's health, and reducing maternal mortality.
- The MTP Act, 1971, allows abortion up to 20 weeks of gestation, with the consent of the woman and on the advice of one registered medical practitioner (RMP). However, the law was updated in 2002 and 2021.
- The 2021 amendment permits abortion from 20 to 24 weeks of gestation for specific cases like rape survivors, with approval from two doctors.
- It sets up state level Medical Boards to decide if a pregnancy may be terminated after 24 weeks in cases of substantial fetal abnormalities.
- It extends the failure of contraceptive clauses to unmarried women( initially only married women), allowing them to seek abortion services on grounds of

their choice, irrespective of their marital status.

- Consent requirements vary based on age and mental state, ensuring medical practitioner oversight.
- Recent Supreme Court judgments reaffirm women's bodily autonomy. Courts recognized abortion rights in cases of rape and acknowledged reproductive choice as a component of personal liberty.

### Note:

- In Justice K.S. Puttaswamy (Retd.) vs. the Union Of India And Others (2017), the Supreme court recognized the constitutional right of women to make reproductive choices, as a part of personal liberty under Article 21 of the Indian Constitution, which, despite laying a robust jurisprudence on reproductive rights and the privacy of a woman, does not translate into a fundamental shift in power from the doctor to the woman seeking an abortion.

### Complexities of Bihar's Ongoing Caste Survey

- The ongoing caste-based survey in Bihar has garnered significant attention, leading to legal battles and debates surrounding its constitutionality, necessity, and potential implications.

### Purpose of the Caste-based Survey

- The caste-based survey was

initiated by the Bihar government on 7th January 2023. The government stated that detailed information on socio-economic conditions would help create better policies and schemes for disadvantaged groups.

- The survey encompasses the recording of economic status alongside caste information, with a target population of 12.70 crore in Bihar's 38 districts.

### Caste-based Survey Facing Legal Challenges

#### Critics' Opposition to the Caste-Based Survey:

- The survey was challenged by several petitioners in the Patna High Court on various grounds, such as violating the Constitution, infringing on privacy, being beyond the competence of the state government, being politically motivated, and being based on unreliable methods.
- The petitioners assert that the State government lacks the legal competence to appoint District Magistrates and local authorities for data collection without a notification under Section 3 of the Census Act, 1948, issued by the Central government.
- Also, assigning a caste identity to all citizens, regardless of whether they intend to use State benefits, goes against the Constitution.
- This is against the right to identity, right to dignity, right



to informational privacy, and right of choice guaranteed by Article 21.

## **SC Handbook on Gender Stereotypes**

- Recently, the Chief Justice of India (CJI) has released a Handbook, correcting Gender Stereotypes and offering guidance on how to avoid utilising harmful gender stereotypes, in particular those about women, in judicial decision making and writing.

### **What is the Handbook**

- The Handbook on Gender Stereotypes is released by the Supreme Court of India with the intention of assisting judges and legal practitioners in recognizing, understanding, and combating gender stereotypes present in legal language and judgments.
- It highlights common stereotypical words and phrases that are often used to describe women in legal documents.
- It points out instances where such language perpetuates antiquated or incorrect notions about women's roles and behavior.
- It also provides specific examples of language that should be replaced with more neutral and accurate terms.
- For instance, it suggests using "woman" instead of "career woman," "street sexual harassment" instead of "eve teasing," and "rape" instead of "forcible rape."

### **Objective:**

- The handbook aims to promote more equitable and unbiased language usage in judicial discourse.
- The goal of the handbook is to encourage a shift towards language that reflects a more modern and respectful understanding of gender and promotes equal rights for all individuals, regardless of their gender.

### **Need for Effective Self-Regulation of Media**

- Recently, the Supreme Court (SC) has emphasized the importance of strengthening the self-regulatory mechanisms adopted by television channels to ensure ethical conduct and responsible reporting.
- The court was hearing an appeal presented by the News Broadcasters and Digital Association (NBDA) challenging remarks made by the Bombay High Court against the effectiveness of self-regulation.
- The Bombay High Court had criticized media trials and observed that existing self-regulatory mechanisms lacked the character of statutory mechanisms.

### **SC's Observations**

- Balancing Regulation and Freedom of Speech:
- The SC acknowledged the significance of avoiding pre-censorship or post-censorship by the government while

maintaining ethical standards in media content.

- The court commended the idea of self-regulation by media outlets but emphasized that such mechanisms should be more effective in curbing unethical conduct.

### **Notice Issued to Strengthen Regulatory Framework:**

- The SC issued a notice to NBDA and other relevant parties to explore the enhancement of the regulatory framework.
- The court emphasized the necessity of examining whether the current steps taken to establish self-regulatory mechanisms need to be strengthened both in terms of jurisdiction and the final consequences of violations.

### **Concerns Over Media Behavior:**

- The SC highlighted the frenzy in media coverage following the death of an actor, where speculation about guilt or innocence could impact ongoing investigations.
- Court emphasized that the media's role should be to uphold the presumption of innocence until proven guilty rather than preemptively shaping public opinion.

### **Proposals to Enhance Fines and Guidelines:**

- The court questioned the adequacy of the current Rs 1 lakh fine imposed for violations, suggesting that fines should be proportionate to the profits generated by the entire show.

- The Chief Justice raised the idea of "disgorgement," similar to the practice in securities regulation, where violators return ill-gotten gains.

### **Overhauling IPC, CrPC, Evidence Act**

- Recently, the Union Home Minister introduced three bills in the Lok Sabha that aim to repeal and replace the Indian Penal Code (IPC), the Code of Criminal Procedure (CrPC), and the Indian Evidence Act, which were enacted during the British rule in India. The bills are:
- The BharatiyaNyaySanhita Bill, 2023, which will replace the IPC, 1860
- The BhartiyaNagrikSurakshaSanhita Bill, 2023, which will replace the CrPC, 1898
- The BharatiyaSakshya Bill, 2023, which will replace the Evidence Act, 1872

### **Main Features of the BharatiyaNyaySanhita Bill, 2023?**

- The bill defines terrorism and offenses such as separatism, armed rebellion against the government, challenging the sovereignty of the country, which were earlier mentioned under different provisions of law.
- It repeals the offense of sedition, which was widely criticized as a colonial relic that curbed free speech and dissent.
- It prescribes capital punishment as the maximum sentence for

mob lynching, which has been a menace in recent years.

- It proposes 10 years imprisonment for sexual intercourse with women on false promise of marriage, which is a common form of deception and exploitation.
- The bill introduces community service as a form of punishment for specific crimes, which can help in reforming offenders and reducing overcrowding in prisons.
- The bill fixes a maximum limit of 180 days to file a charge sheet, which can speed up the trial process and prevent indefinite delays.

### **Main Features of the BhartiyaNagrikSurakshaSanhita Bill, 2023**

- It promotes the use of technology for trials, appeals, and recording depositions, allowing video-conferencing for proceedings.
- The bill makes video-recording of statement of survivors of sexual violence compulsory, which can help in preserving evidence and preventing coercion or manipulation.
- The bill mandates that police must inform about the status of a complaint in 90 days, which can enhance accountability and transparency.
- Section 41A of the CrPC will be renumbered as Section 35. This change includes an added safeguard, stipulating that no arrest can be made without

prior approval from an officer at least at the rank of Deputy Superintendent of Police (DSP), especially for offenses punishable by less than 3 years or for individuals above 60 years.

- The bill requires that police consult the victim before withdrawing a case punishable by seven years or more, which can ensure that justice is not compromised or denied.
- It allows absconding criminals to be tried in-absentia by court and sentenced too, which can deter fugitives from escaping justice.
- It empowers magistrates to take cognizance of offenses based on electronic records such as emails, SMSs, WhatsApp messages etc., which can facilitate evidence collection and verification.
- Mercy petitions in death sentence cases to be filed within 30 days to the Governor and within 60 days to the President.
- No appeal shall lie against the President's decision in any court.

### **Main Features of BharatiyaSakshya Bill, 2023**

- The bill defines electronic evidence as any information generated or transmitted by any device or system that is capable of being stored or retrieved by any means.
- It lays down specific criteria for admissibility of electronic evidence such as authenticity, integrity, reliability etc., which

can prevent misuse or tampering of digital data.

- It provides for special provisions for admissibility of DNA evidence such as consent, chain of custody etc., which can enhance accuracy and reliability of biological evidence.
- It recognises expert opinion as a form of evidence such as medical opinion, handwriting analysis etc., which can assist in establishing facts or circumstances relevant to a case.
- It introduces the presumption of innocence as a fundamental principle of criminal justice system, which means that every person accused of an offence is presumed to be innocent until proven guilty beyond reasonable doubt.

### **The CEC and Other ECs (Appointment, Conditions of Service and Term of Office) Bill, 2023**

- Recently, the Government has introduced a bill in the Rajya Sabha aiming to alter the process of appointing the Chief Election Commissioner (CEC) and Election Commissioners (ECs).
- The Bill seeks to remove the Chief Justice of India (CJI) from a panel to select the CEC and ECs.
- This move has sparked discussions regarding the composition of the selection committee and its implications for the independence of the process.

### **Background**

- The Supreme Court (SC) in March 2023 ruled that CEC and ECs will be appointed by the President of India on the advice of a Committee consisting of the Prime Minister, and Leader of Opposition in the Lok Sabha, and the Chief Justice of India until a law is enacted by Parliament on their appointments.
- This ruling emerged from a 2015 Public Interest Litigation (PIL) challenging the appointment process.

### **Search Committee:**

- The Bill proposes the establishment of a Search Committee to prepare a panel of five persons for consideration for the positions of CEC and ECs.

### **Can not be Invalidated due to Vacancy:**

- The appointment of the CEC and other ECs will not be invalidated due to any vacancy or defect in the constitution of the Selection Committee.

### **Repealing of Previous Act:**

- The proposed Bill repeals the Election Commission (Conditions of Service of Election Commissioners and Transaction of Business) Act, 1991.
- The business of the Election Commission will be governed by the new Act once it is passed.
- The 1991 Act provides that the salary of the ECs will be equal to that of a Supreme Court judge.

- The Bill provides that salary, allowance, and service conditions of the CEC and other ECs will be the same as that of the Cabinet Secretary.

### **Unanimity and Majority Decision:**

- The Bill maintains the provision that the business of the Election Commission should be transacted unanimously whenever possible. In case of a difference of opinion, the

### **SuSwagatam Portal**

- Recently, the Supreme Court (SC) announced the launch of the portal 'SuSwagatam', which would enable advocates, visitors, interns and others to register themselves online and get e-passes to enter the apex court.
- In July 2023, the portal underwent testing as a pilot project and received positive responses from its users.
- It is a web-based and mobile-friendly application that allows users to request for e-passes for various purposes such as attending court hearings, meeting advocates, etc.

### **Inter-Services Organisation (Command, Control & Discipline) Bill 2023**

- Lok Sabha recently passed the Inter-Services Organisation (Command, Control & Discipline) Bill - 2023 with the aim to bolster the efficiency, discipline, and jointness among the Armed Forces.



### What is the Inter-Services Organisation (Command, Control & Discipline) Bill 2023?

- Background: Currently, the Armed Forces operate under distinct Service Acts – the Army Act 1950, Navy Act 1957, and Air Force Act 1950.
- However, the diverse nature of these acts has sometimes posed challenges in maintaining uniform discipline, coordination, and expeditious proceedings across the inter-services establishments.
- The Inter-Services Organisation (Command, Control, & Discipline) Bill - 2023, addresses these concerns with its forward-looking provisions.
- ISO Bill 2023 does not propose any alteration to the existing Service Acts, Rules, or Regulations that have stood the test of time and judicial scrutiny over several decades.

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## VI. Public Awareness and General Administration

### Post-Hospitalization Mortality in Covid-19 Patients

- Recently, a new study conducted by the Indian Council of Medical Research (ICMR) has shed light on the post-hospitalization mortality rate among former Covid-19 patients.
- The study's comprehensive examination of factors such as comorbidities (more than one disease or condition at the same time), age, and vaccination sheds light on vulnerabilities and emphasizes the importance of managing health conditions to reduce mortality risk.

### Mortality Rate and Participant Demographics:

- The study examined 14,419 former Covid-19 patients across 31 Indian medical centers.
- The observed mortality rate one year after hospital discharge is 6.5%.
- Around 50% of patients who

died, passed away within 28 days of hospital discharge.

- The risk of mortality decreases as time elapses after discharge.
- The elderly age group (60+) with comorbidities is particularly vulnerable to mortality.

### Container Terminal Project at Deendayal Port

- Recently, the Deendayal Port Authority and Dubai-based DP World, a multinational logistics company, partnered for the Mega Container Terminal Project at Tuna Tekra, Gujarat. The initiative was initiated by India's Ministry of Ports, Shipping & Waterways (MoPSW).
- With the aim to enhance port capacity, foster multimodal logistics, and promote global connectivity, this venture signifies a pivotal step in public-private partnership.
- The terminal will have an annual capacity to handle 2.19 million twenty foot equivalent units (TEUs) with capability to handle next-generation vessels

carrying more than 18,000 TEUs.



- Mega Container Terminal Project is fully compliant with the green port guidelines.
- The terminal will connect Northern, Western and Central India with the Global market.
- The project aligns with India's Vision 2047 to quadruple port handling capacity.
- The terminal will be a part of the National Infrastructure Pipeline complementing PM Gati Shakti.
- The Container Terminal is expected to transform the economic landscape of Kutch, with the creation of several ancillary services like warehousing, etc. and also result in the creation of direct and indirect employment opportunities.

### About Deendayal Port

- Deendayal Port, also known as Kandla port, is one of the twelve Major Ports in India and is located on the West Coast of India, in the Gulf of Kutch in the State of Gujarat.
- It is the largest port in India by volume of cargo handled.

### Khanan Prahari to Combat Illegal Coal Mining

- The Ministry of Coal has launched the KhananPrahari mobile app, revolutionizing the fight against illicit coal mining activities.

#### KhananPrahari

- This innovative app allows citizens to take an active role in reporting incidents of illegal coal mining through the submission of geo-tagged photographs and textual information.
- The corresponding web portal called as Coal Mine Surveillance & Management System (CMSMS) has been developed in association with the Bhas-karacharya Institute of Space Application & Geoinformatics, Gandhinagar, and Central Mine Planning and Design Institute (CMPDI), Ranchi.
- This comprehensive approach not only leverages cutting-edge technology but also emphasizes public participation in addressing this critical issue.

#### Features:

- Reporting Incidents: Users can easily report incidents of illegal

mining by taking photographs and providing comments on the incident.

- Confidentiality: The user's identity is kept confidential, ensuring privacy and security.
- Complaint Tracking: Complainants receive a complaint number, which they can use to easily track the status of their reported complaints.

#### Status of Coal Mining in India

- India is the world's second largest coal producer and 5th largest country in terms of coal deposits.
- Coal is a type of fossil fuel found in the form of sedimentary rocks and is often known as 'Black Gold'.
- However, some parts of its coal requirement are met through imports as the country is also among the major consumers. India's coal imports increased by 30% in the 2022-23.

#### Bharat New Car Assessment Programme

- The Ministry of Road Transport and Highways, Government of India, has introduced the Bharat New Car Assessment Programme (Bharat NCAP).
- This indigenous star-rating system aims to evaluate the safety of vehicles in the event of a collision, empowering consumers to make informed decisions while purchasing cars.
- This comprehensive program is set to come into effect from October 1, 2023, and will play

a pivotal role in curbing the alarming number of road fatalities in India.

#### Bharat NCAP

- **About:** Under the Bharat NCAP initiative, vehicles, particularly passenger cars, will be subjected to rigorous crash testing procedures, and based on their performance as per protocols laid down in the soon-to-be-published Automotive Industry Standard 197, they will be assigned a safety rating ranging from one to five stars.
- The programme is applicable to passenger vehicles with not more than eight seats in addition to the driver's seat with gross vehicle weight not exceeding 3,500 kgs.
- The test procedure involves Frontal Offset Test, Side Impact Test and Pole-Side Impact Test.
- This rating will provide consumers with a clear indication of a vehicle's safety standards in the event of a collision.
- Notably, Bharat NCAP is voluntary, encouraging manufacturers to nominate their vehicles for testing, thereby driving the production of safer cars in the Indian market.

#### Nutrition's Role in Tuberculosis Prevention

- Recently, two studies conducted by the Indian Council of Medical Research (ICMR) and published in prestigious journals such as The Lancet and The Lancet Global Health, have

unveiled a pivotal connection between nutrition and tuberculosis (TB) prevention.

- Reducing Activation of Tuberculosis by Improvement of Nutritional Status (RATIONS) trial shows correlation between nutritional support and the reduction of TB incidence.
- Weight gain's impact on TB mortality revealing how increased weight among malnourished TB patients correlates with reduced mortality rates.



#### Note:

- As per WHO, India accounts for 27% of the global TB incidence and 35% of total TB-related deaths.
- India is set to eliminate TB by 2025.

#### Key Highlights of the Studies

- A total of 5,621 people were given the nutrient-dense food for a year while 4,724 people received food parcels with no extra nutrition.
- At the end of the trial, there was a 39% reduction in TB incidence in the intervention group versus the control one.
- Weight gain decreased the risks of tuberculosis mortality

in severely malnourished TB patients in Jharkhand.

- Instantaneous risk of death was reduced by 13% for a 1% weight gain and 61% for 5% weight gain.

### **NMC Registered Medical Practitioner (Professional Conduct) Regulations 2023**

- Recently, the National Medical Commission (NMC), the apex regulatory body for medical education and practice in India, issued new guidelines on professional conduct for doctors, which mandate them to prescribe only generic drugs instead of specific brands.
- This has sparked a protest from the Indian Medical Association (IMA), the largest body of doctors in the country, which has called the guidelines "unscientific" and "impractical".

#### National Medical Commission (NMC) Guidelines

- Doctors can provide information online, ensuring it is verifiable and not misleading.
- Prohibition on discussing patient treatment specifics or sharing patient scans.
- Restriction on sharing patient testimonials, images, and videos.
- Prohibition on soliciting patients directly or indirectly through social media.

#### Right to Refuse Treatment:

- Doctors may refuse treatment

to abusive, unruly, or violent patients and relatives.

- Doctors may deny treatment if the patient cannot afford it but not in medical emergencies.
- Prohibition on discrimination based on gender, race, religion, caste, socio-economic factors.

#### Prescription and Medication Guidelines:

- Prescriptions to be written in legible, capital letters.
- Generic medicines should be prescribed, except for specific cases.
- Judicious use of fixed-dose combinations, prescribing approved combinations only.
- Encouraging education about the equivalence of generics and branded medicines.
- CPD sessions or conferences cannot be sponsored by the pharmaceutical industry.
- Doctors should not participate in third-party educational activities with pharma sponsorships.
- Doctors or their families should not receive gifts, hospitality, cash, or grants from pharmaceutical companies.
- Prohibition on accepting commissions from diagnostic centers, medical equipment, etc., for referrals or endorsements.

#### **Baghjan Oil Spill**

- The National Green Tribunal (NGT) ordered the Assam government to provide interim compensation to victims of Baghjan oil and gas leak. This



site belongs to OIL India Ltd near Dibrusaikhowa National Park.

- NGT-formed committee led by Justice BP Katakay found environmental violations, declaring Baghjan oil and gas field illegal.
- MaguriMotapungBeel (also known as MaguriMotapung Bill, Maguri Bill and MaguriBeel) is a wetland and lake located near to Dibru-Saikhowa National Park and Motapung Village of Tinsukia district in Assam.

### **Matti Banana**

- Matti banana, a native variety of Kanniyakumari district, Tamil Nadu, was recently granted the Geographical Indication (GI) tag for its unique features and qualities.
- Matti banana has six types that differ in colour, aroma, taste, and texture, and are suitable for baby food and medicinal use.
- This Banana is commonly known as 'Baby Banana'.
- It grows best in the specific climate and soil of Kanniyakumari.



### **Integrating NavIC with Aadhaar Enrolment Systems**

- The Department of Space (DoS) is coordinating the integration of NavIC (Navigation in Indian Constellation), India's indigenous satellite navigation system, with Aadhaar enrolment devices.
- NavIC, comprising seven satellites, is India's equivalent of the American GPS, providing positioning and navigation services.
- NavIC offers Standard Position Service (SPS) for civilian use and Restricted Service (RS) for strategic applications.
- The NavIC coverage area includes India and a region up to 1,500 km beyond the Indian boundary.
- NavIC has found utility in disaster management, aiding agencies like the National Disaster Management Agency (NDMA) and the Indian National Centre for Ocean Information System (INCOIS) in alert dissemination for natural calamities.
- The move involves adapting Aadhaar enrolment kits to work with NavIC, enhancing accuracy and functionality.

### **State of Elementary Education in Rural India 2023**

- Recently, the Ministry of Education has released the State of Elementary Education in Rural India - 2023 report, highlight-

ing the Prevalence of Smartphone Usage among students.

- The report was based on a survey conducted by the Development Intelligence Unit (DIU), a collaboration between NGO Transform Rural India and Sambodhi Research and Communications.
- The survey gathered responses from 6,229 parents of schoolchildren aged 6–16 in rural communities across 21 States.



### **What are the Key Findings of the Survey?**

- Smartphone Usage and Entertainment:
  - 49.3% have access to smartphones. 76.7% of parents indicated that their children primarily use smartphones for playing video games, indicating a preference for entertainment over educational activities.
  - Additionally, 56.6% of students use smartphones to download and watch movies, while 47.3% use them to download and listen to music.
  - In contrast, only 34% of students use smartphones for study-related downloads, and a mere 18% access online learning via tutorials.

## India Smart Cities Award Contest 2022

- Recently, the Ministry of Housing and Urban Affairs (MoHUA) has announced the India Smart Cities Award Contest (ISAC) 2022 under the Smart Cities Mission (SCM), that felicitated 66 winners in various categories.
- Indore, Madhya Pradesh, and Chandigarh emerged as top performers in the ISAC 2022 awards, securing recognition for their excellence in different areas of urban development.
- National Smart City Award:
  - Indore secured the prestigious national smart city award, reflecting its exceptional progress in urban development strategies, followed by Surat and Agra.
  - Indore's commitment to sanitation, water supply, and urban environment earned it recognition as a leader in these vital areas.
- State Award:
  - Madhya Pradesh received the state award for its comprehensive approach to fostering smart city initiatives within its borders.
  - Madhya Pradesh is followed by Tamil Nadu and Rajasthan.
- Union Territory (UT) Award:
  - Chandigarh was honored with the UT award, acknowledging its efforts to transform itself into a model smart city.
- Other Categories:
  - Coimbatore took the top spot for built environment,
  - Ahmedabad for the culture and Integrated Command and Control Centre (ICCC) category,
  - Jabalpur for economy,
  - Chandigarh for governance and mobility,
  - Indore for sanitation, water and urban environment,
  - Vadodara for social aspects,

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## VII. Welfare Oriented Schemes and their Utility, Problem in Public Delivery System (Central Government & State Government)

### 1. Central Government

#### City Investments to Innovate, Integrate and Sustain 2.0

- Recently, the Government has approved the 'City Investments to Innovate, Integrate and Sustain 2.0 (CITIIS 2.0)'.

#### CITIIS 2.0

- It is a part of the Smart Cities Mission and aims to promote integrated waste management and climate-oriented reform actions.

- CITIIS will consider Smart City Projects in the following four themes:

- Sustainable Mobility.
- Public Open Spaces.
- Urban E-governance and ICT.
- Social and Organisational Innovation for Low-Income Settlements.
- The program will run for a period of four years, i.e., from 2023 till 2027.

#### Objective:

- The program envisages to support competitively selected projects promoting circular economy with focus on integrated waste management at the city level, climate-oriented reform actions at the State level, and institutional strengthening and knowledge dissemination at the National level.
- CITIIS 2.0 aims to leverage and scale up the learnings and suc-

cesses of CITIIS 1.0.

- CITIIS 1.0 was launched jointly in 2018 and consisted of three components:
- 12 city-level projects selected through a competitive process.
- Capacity-development activities in the State of Odisha.
- Promoting integrated urban management at the national level through activities undertaken by , National Institute of Urban Affairs (NIUA), which was the Program Management Unit (PMU) for CITIIS 1.0.

#### Funding:

- The funding for CITIIS 2.0 would include a loan from AFD and KfW and a technical assistance grant from the EU.
- **Components:** CITIIS 2.0 has three major components:
  - Financial and technical support for up to 18 Smart Cities for projects promoting circular economy with focus on Integrated Waste Management.
  - Support to all States/Union Territories (UTs) for Climate action.
  - Interventions at National level to support scale-up across all cities and towns.

#### Significance:

- CITIIS 2.0 will supplement the climate actions of Government of India through its ongoing National programs (National Mission on Sustainable Habitat, AMRUT 2.0, Swachh Bharat Mission 2.0 and Smart Cities

Mission), as well as contributing positively to India's Intended Nationally Determined Contributions (INDCs) and Conference of the Parties (COP26) Commitments.

#### 2PM-YASASVI SCHEME

- Ministry of Social Justice and Empowerment is implementing an umbrella scheme namely PM Young Achievers Scholarship Award Scheme for Vibrant India (PM –YASASVI) for students in the Other Backward Class (OBC), SC, Denotified, Nomadic and semi-Nomadic Tribe (DNT) and Economically Backward Caste (EBC) categories.

#### The key components of the scheme include

- Pre-Matric Scholarship for OBC, EBC and DNT Students.
- Post-Matric Scholarship for OBC, EBC and DNT Students.
- Top Class School Education for OBC, EBC and DNT Students.
- Top Class College Education for OBC, EBC and DNT Students.
- Construction of Hostel for OBC Boys and Girls.

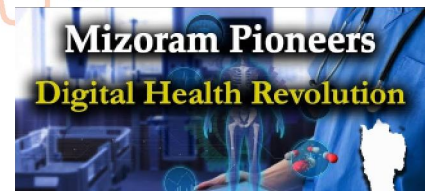
#### Mizoram Pioneers Digital Health Revolution

- The National Health Authority (NHA) has unveiled the "100 Microsites" project, aimed at accelerating the adoption of Ayushman Bharat Digital Mission (ABDM) across India.
- Mizoram has achieved a remarkable feat by becoming the first state to operationalize an

ABDM Microsite in its capital city, Aizawl.

#### ABDM Microsites

- The ABDM Microsites are geographically defined regions where targeted outreach initiatives are conducted to onboard small and medium-scale private healthcare providers.
- The Microsite project aims to ensure that all healthcare facilities, including private clinics, small hospitals, and labs, become ABDM-enabled and offer digital health services to patients.
- An interfacing agency under this program will have an on-ground team to reach out to the healthcare providers in the area.



#### Benefits:

- Patients can benefit from digital services such as online appointments, e-prescriptions, e-reports, e-bills, e-consent, e-referrals, and e-feedback at these facilities.
- Health records generated within these ABDM-enabled facilities can be seamlessly linked to their Ayushman Bharat Health Accounts (ABHAs).
- Furthermore, these records are accessible and shareable through any ABDM-enabled Personal Health Record (PHR) application on mobile devices,



ensuring that patients have access to their health information at their fingertips.

### **Mission AmritSarovar**

- Recently, the Ministry of Rural Development has provided insights into the advancements made in the implementation of Mission AmritSarovar, an initiative aimed at enhancing water security across various regions.

### **Mission AmritSarovar**

- On April 24, 2022, Mission AmritSarovar was launched as part of India's "AzadiKaAmrit-Mahotsav" celebrations for the 75th year of independence.
- The mission aims to construct/rejuvenate at least 75 AmritSarovars in each district across India to overcome the water crisis in rural areas.
- The target for these water bodies serves as a crucial step towards ensuring water sustainability at the local level.
- Eight Central Ministries/Departments, actively contribute to the mission's execution.
- Geospatial data and technology play a pivotal role in identifying and executing the construction and rejuvenation of AmritSarovar.

### **Progress and Achievements:**

- So far, out of over 1 lakh identified AmritSarovars, the work has been started for over 81,000 AmritSarovars and a total of over 66,000 AmritSarovars have been constructed/rejuvenated.

- The national target of 50,000 AmritSarovars has been accomplished, demonstrating the dedication and efficacy of the mission.

### **PM-DevINE and NESIDS Schemes**

- Recently, The Prime Minister's Development Initiative for North Eastern Region (PM-DevINE), designed to bolster North-East India's development, has undergone crucial revisions to align with the region's needs and aspirations.
- These new guidelines govern all PM-DevINE projects effective from 12th October 2022 onwards.
- Additionally, the Ministry of Development of the North Eastern Region(MDoNER) releases new Scheme Guidelines for implementing Cabinet-approved North East Special Infrastructure Development Scheme (NESIDS) during the 15th Finance Commission's balance period (2022-2026).

### **Project Oversight and Governance:**

- MDoNER will oversee project selection, approval, and monitoring in consultation with State Governments, North Eastern Council (NEC), and concerned Central Ministries, with implementation through NEC or Central Ministries/agencies.
- The guidelines outline the process, including project

identification, selection, DPR preparation, sanction, fund release, monitoring, and completion.

### **Empowered Inter-Ministerial Committee (EIMC):**

- Establishment of EIMC to oversee various functions within PM-DevINE.
- Chaired by the Secretary of the MDoNER.

### **State Level Empowered Committee (SLEC):**

- Creation of SLEC at the State level for project review and approval.
- Composition of SLEC including Chief Secretary, relevant Secretaries, and representation from NEC.

### **Regarding Project Selection:**

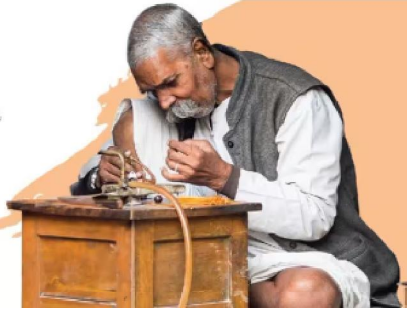
- North Eastern States must establish Gati Shakti implementation mechanisms like Empowered Group of Secretaries, Network Planning Group, and Technical Support Unit, along with notifying a State Logistics Policy and updating Gati Shakti National Master Plan data layers, including land revenue maps.
- States not meeting these criteria won't receive new PM-DevINE project sanctions from 2023-24 onwards.

### **Vishwakarma Yojana**

- In the recent Independence Day address, the Prime Minister unveiled two significant initiatives aimed at empowering artisans

and women's self-help groups (SHGs) across India.

- **The two initiatives are:** the VishwakarmaYojana and the provision of drones for women SHGs under Lakpatididi Scheme.



### VishwakarmaYojana

- The VishwakarmaYojana is a pioneering scheme designed to uplift individuals skilled in traditional craftsmanship, particularly from the Other Backward Classes (OBC) community.
- This scheme, named after the divine architect and craftsman Vishwakarma, seeks to preserve and enhance the guru-shishyaparampara (teacher-pupil tradition) of passing down skills within families engaged in various artisanal trades.

#### Features:

- Artisans and craftspeople enrolled in the scheme will receive a PM Vishwakarma certificate and an identity card.
- They will also be eligible for collateral-free credit support of up to Rs. 1 lakh (first tranche) and Rs. 2 lakh (second tranche) at a concessional interest rate of 5%.
- The scheme encompasses 18

traditional trades across both rural and urban areas. These trades encompass carpenters, boat-makers, blacksmiths, potters, sculptors, cobblers, tailors, and more.

- Registration for the VishwakarmaYojana can be completed at common services centers in villages.
- While the central government will provide funding for the scheme, state governments' support will also be sought.
- A notable objective of the scheme is to ensure that artisans are seamlessly integrated into both domestic and global value chains, thus enhancing their market access and opportunities.

### Lakpatididi Scheme

- The government's goal is to create two crore "lakpatididis" (prosperous sisters) in villages. This scheme aligns with the broader mission of poverty alleviation and economic empowerment.
- Under this scheme, women will be provided skill training so that they can earn over Rs 1 lakh per year.

#### Features:

- Drones will be provided to women SHGs for agricultural activities.
- This initiative aims to leverage technology to transform the agricultural landscape while empowering women in rural communities.

- Around 15,000 women's SHGs will be given training in operating and repairing drones.
- This training will not only create new avenues for income generation but also equip women with cutting-edge skills.
- Drones have the potential to revolutionize agriculture by enabling precision farming, crop monitoring, and pest control.
- Under the scheme, women will be trained in skills like LED bulb making, plumbing, among others.

### New Scheme to Complement PMAY-U

- Recently, Prime Minister in his address on 77th Independence Day, unveiled a new scheme aimed at alleviating the housing crisis faced by the urban poor.
- The new scheme complements the PradhanMantriAwasYojana Urban (PMAY-U), a flagship government initiative launched in 2015.

### PradhanMantriAwasYojana Urban

- The PMAY-U, executed under the aegis of the Ministry of Housing and Urban Affairs (MoHUA), aims to tackle the acute shortage of urban housing among economically disadvantaged segments.
- The mission's overarching goal is to provide "pucca" (durable and permanent) houses to all eligible urban households by 2022.

- To achieve this, the scheme has been extended until December 2024 to ensure the completion of all sanctioned houses without altering the funding pattern and implementation methodology.
- Beneficiaries: The Mission addresses urban housing shortage among the EWS/LIG and MIG categories including the slum dwellers.
  - Economically Weaker Section (EWS) - with a maximum annual family income of Rs. 3,00,00
  - Low Income Group (LIG) - with maximum annual family income of Rs. 6,00,000 and
  - Middle Income Groups (MIG I & II) - with a maximum annual family income of Rs. 18,00,000
  - A beneficiary family will comprise husband, wife, unmarried sons and/or unmarried daughters

### **PM-eBus Sewa**

- The Indian Cabinet has approved the "PM-eBusSewa" scheme, aiming to bolster city bus operations by introducing 10,000 Electric Buses through a Public-Private Partnership (PPP) model.

### **PM-eBusSewa**

- It aims to enhance urban transportation efficiency and promote Environmentally-Friendly Practices.

### **Segment A:**

- Augmenting City Bus Services (169 cities):
- This segment is dedicated to strengthening urban transportation by 10,000 e-buses under the PPP model.
- The initiative recognizes that efficient operations require the development or upgrading of depot infrastructure, alongside the creation of essential behind-the-meter power infrastructure like substations to accommodate the electric buses.

### **Segment B:**

- Green Urban Mobility Initiatives (181 cities):
  - This segment includes enhancing bus priority, improving infrastructure, establishing multimodal interchange facilities, implementing NCMC (National Common Mobility Card)-based Automated Fare Collection Systems, and building necessary charging infrastructure.
  - By integrating these sustainable practices, the scheme aims to transform urban mobility landscapes.
- Target Population and Unreached Areas:
  - The scheme will encompass cities with populations of three lakh and above, based on the 2011 census data.
  - This comprehensive approach includes all Capital cities of Union Territories,

regions in the North Eastern part of the country, and hilly states.

- A significant highlight of the scheme is its focus on cities lacking organized bus services, making it an effort to bridge the urban mobility gap.
- Operation and Facilitation:
  - The operational aspect of the scheme places the responsibility on states and cities to manage and sustain the bus services while making payments to the appointed bus operators.
  - The Central Government's role is to facilitate and support these operations by providing subsidies as outlined in the scheme.



### **Significance of the Scheme**

1. Creates Employment Opportunity:
2. Seeks to propel the adoption of E-Mobility:
3. Environmental Impact and GHG Reduction:
4. Reducing the pollution and carbon emission



## Empowering Women Through 'Koosina Mane' Initiative

- Karnataka's 'Koosina Mane' initiative, introduced in its 2023-24 Budget, marks a progressive stride towards enhancing women's labor force participation and addressing gender disparities.



- This initiative aims to establish childcare centers across 4,000 gram panchayats, supporting working mothers under the MGNREGA and others nearby.
- It addresses the "triple burden" women face by redistributing childcare responsibilities, potentially enabling sustained employment and upskilling.
- It will address the issue of the 'motherhood penalty,' which is considered to be one of the reasons why women drop out of the labor force.

## Pradhan MantriUchchatarShikshaAbhiyan

- 14 States and Union Territories are yet to sign a Memorandum of Understanding (MoU) with the Ministry of Education, mandating the implementation of the National Education Policy (NEP) to avail funds for

the next three years, under the PradhanMantriUchchatarShikshaAbhiyan (PM-USHA).

### PM-USHA Scheme

- In the light of the National Education Policy, RUSA (RashtriyaUchchatarShikshaAbhiyan) Scheme has been launched as "PradhanMantriUchchatarShikshaAbhiyan (PM-USHA)" in June 2023.
- RUSA, as a Centrally Sponsored Scheme launched in October 2013, aiming at providing strategic funding to higher education institutions throughout the country.
- It focuses on:
  - Equity Access and inclusion in higher education
  - Developing Quality Teaching & Learning processes,
  - Accreditation of Non Accredited Institutions and improving accreditation.
  - ICT – based Digital Infrastructure.
  - Enhancing Employability through Multidisciplinary.

### Objective:

- To improve the overall quality of existing state higher educational institutions by ensuring their conformity to prescribed norms and standards and adoption of accreditation as a quality assurance framework.
- Ensure governance, academic, and examination reforms in the State higher educational institutions and establish backward and forward linkages

with school education on one hand and employment market, on the other hand, to facilitate self-reliance and thus creating an Atma-Nirbhar Bharat

- Create an enabling atmosphere in the higher educational institutions to devote themselves to research and innovations.

### Key Features:

- It supports 35 accredited state universities with Rs 100 crore each to facilitate multi-disciplinary education and research.
- The scheme provides provisions for establishing new model degree colleges.
- Grants are allocated to strengthen universities.
- PM-USHA targets remote, Left-Wing Extremism (LWE) affected regions, aspirational districts, and areas with low Gross Enrolment Ratio (GER).
- The scheme aids state governments in promoting gender inclusion and equity, as well as upgrading skills for better employability through Information and Communication Technology (ICT).

### India's ODOP Wall

- Recently, through a collaborative effort between One District One Product (ODOP) and DeendayalAntyodayaYojna - National Rural Livelihoods Mission (DAY-NRLM), the 'ODOP Wall' has been introduced. This initiative aligns with highlighting India's exceptional craft heritage globally.

- 'ODOP Wall' aims to showcase India's craft uniqueness world-wide.
- ODOP initiative focuses on promoting one unique product from each district, fostering balanced regional development.
- Diverse range of products covered, including handlooms, handicrafts, and agricultural products.
- Collaboration identifies and promotes products with cultural significance and unique qualities.
- Boosts sales, and supports rural self-help groups (SHGs) and indigenous crafts.

### **Amrit Bharat Stations Scheme**

- Recently, the Indian Prime Minister has laid the foundation stone for the Redevelopment of 508 railway stations across India as a part of Amrit Bharat Stations Scheme, spreading across 27 states and union territories.
- The extensive redevelopment project, estimated to cost more than RS 24,470 crores, aims to transform railway stations into modern, well-equipped hubs.

#### **Amrit Bharat Stations Scheme**

- The Amrit Bharat Station Scheme aims to redevelop 1309 stations nationwide.
- The redevelopment will provide modern passenger amenities along with ensuring well-designed traffic circulation, inter-modal integration, and signage

for the guidance of passengers.

- The Scheme was launched in February 2023 by the Ministry of Railways.

#### **Station-wise Plans:**

- The station buildings' designs will be inspired by local culture, heritage, and architecture.
- For instance, the Jaipur Railway Station will feature elements resembling the HawaMahal and Amer Fort from Rajasthan.
- Integrated Approach to Urban Development:
  - The redevelopment is planned with a holistic approach to urban development, treating the stations as "City Centres."
  - This approach aims to integrate both sides of the city and create well-designed traffic circulation, inter-modal connectivity, and clear signage for passengers' guidance.

#### **Benefits:**

- The redeveloped stations will feature modern passenger amenities, including upgraded waiting rooms, improved seating on platforms, and free Wi-Fi connectivity.
- The redevelopment plans also incorporate the local community's input, aiming to represent the essence of the region in the station's design and amenities.
- LED lights will be installed in around 70,000 coaches and the substantial increase in the number of bio-toilets in trains, contributing to environmental sustainability.

- There is an ambitious goal for India's railway network, aiming for Net-Zero Emissions by 2030. The emphasis on green building standards and energy-efficient practices aligns with the broader vision of environmental sustainability.

### **Enhanced Transparency in Mahatma Gandhi NREGS through E-Attendance**

- Recently, the Union Ministry of State for Rural Development provided valuable insights into the E-attendance in Mahatma Gandhi National Rural Employment Guarantee Scheme during a written reply in the Lok Sabha.
- To bolster transparency in the scheme's execution across various states and union territories, a mandate has been established requiring the use of the National Mobile Monitoring System (NMMS) App.
- This app captures attendance with geo-tagged, two time-stamped photographs of workers engaged in the scheme's activities, except for individual beneficiary works.
- Offline mode enables the capture of morning attendance and photographs, with later uploads when a network connection is available.
- This requirement, effective from January 1, 2023, not only fosters citizen oversight of the program but also expedites payment processing.
- The responsibility of recording attendance and photos lies

with worksite supervisors, who employ the NMMS App for this purpose.

### **Digital Health Incentives Scheme**

- National Health Authority (NHA) has announced an extension of its Digital Health Incentives Scheme (DHIS) under the Ayushman Bharat Digital Mission (ABDM).
- The DHIS, offering incentives of up to Rs. 4 crores, has been extended till December 31, 2023.

### **Digital Health Incentives Scheme**

- Under the Digital Health Incentives Scheme (DHIS), hospitals, diagnostic labs, and digital health solution providers are incentivized to embrace transformative digitization practices.
- The scheme operates with the goal of fostering a digitally inclusive healthcare ecosystem that aligns with the larger vision of Ayushman Bharat Digital Mission.

### **Eligibility:**

- Health facilities (hospitals, diagnostic labs) and registered Digital Solution Companies (DSCs) under ABDM's Health Facility Registry (HFR) are eligible to participate in the scheme.

### **Incentive Calculation:**

- The financial incentives are based on the number of digital health records created and linked to Ayushman Bharat Health Account (ABHA) numbers of patients.

### **Achievements:**

- Incentive Recipients: As of June 2023, a total of 1205 health facilities have registered under the DHIS, including 567 public and 638 private hospitals, clinics, and diagnostic labs.
- Digital Solution Companies: Among the 25 registered digital solution companies, 22 are from the private sector, demonstrating diverse participation.

### **Major Challenges Related to Digital Healthcare in India**

- Despite advancements, a significant portion of India still lacks reliable internet connectivity and necessary digital infrastructure.
- Many people, especially in rural areas and older populations, may not be familiar with technology or lack the necessary digital literacy skills to effectively use digital healthcare platforms and services.
- Maintaining patient data privacy and security is a significant concern in digital healthcare. Ensuring that sensitive medical information remains confidential and protected from unauthorized access is crucial.
- While telemedicine has gained popularity, regulatory clarity regarding the practice, prescription of medications, and teleconsultation across state lines has been a challenge.

## **2. State Government**

### **Fresh clause in T.N. welfare scheme**

- The Tamil Nadu Manual Workers (Construction Workers) Welfare Scheme, 1994, has introduced a fresh clause.
- It aimed at benefiting families of manual and inter-State migrant workers in case of accidents resulting in death.
- According to the clause, if a manual worker dies due to an accident at their work site,

financial assistance will be provided to their nominee or legal heirs for transporting the body to their native place.

- This provision also applies to inter-State migrant workers.
- To qualify for the assistance, the accident must be solely and directly linked to the worker's employment.
- It should not involve intentional self-injury, suicide, intoxication, insanity, or breach of the law.

### **Hostel 'Thozhi'**

- Tamil Nadu's Department of Social Welfare and Women Empowerment has started eleven hostels for working women in Nine districts.





- The hostels named 'Thozhi' (translates to a female friend).
- It will be operated under the aegis of the Tamil Nadu Working Women's Hostel Corporation Ltd (TNWWHCL).
- They aim to provide safe and affordable accommodations to women.
- The hostels are located in Chennai, Chengalpattu, Salem, Trichy, Tirunelveli, Vellore, Villupuram, Perambalur and Thanjavur.

### **Scheme for civil services aspirants**

- The Tamil Nadu government has rolled out a scheme to help civil services aspirants access

better coaching facilities and materials.

- Under the scheme, which was announced in the State Budget 2023-24.
- 1,000 civil services aspirants would be shortlisted every year through a test.
- Each of them would be provided Rs. 7,500 a month for 10 months to prepare for the preliminary examination.
- The Tamil Nadu Skill Development Corporation (TNSDC) would implement the 'Naan Mudhalvan' scheme in coordination with Anna Administrative Staff College.

### **Extension of Breakfast Scheme**

- Chief Minister's breakfast

scheme was launched On September 15, 2022.

- On August 25, the scheme was extended to the entire state.
- The scheme will be extended to cover 15.75 lakh students of class one to five in 31,008 government schools across the state.
- The initiative will benefit students studying in schools from 1st to 5th standard across the entire state.



## **VIII. Geography - Geographical marks**

### **Monsoon, El Nino And Their Impact on Agriculture**

- The 2023 southwest monsoon season in India started late, with the initial two weeks experiencing a significant rainfall deficiency of 52.6% below the normal long-period average(LPA).



- However, as of July 30, 2023 there was an overall 6% surplus rainfall. This turnaround has positively impacted kharif crop plantings. However, concerns persist regarding the potential impact of the approaching El Nino phenomenon on rabi crops.

### **Long-Period Average (LPA) of Rainfall**

- The IMD defines the "LPA of rainfall" as the average rainfall recorded over a specific region for a long period, like 30 or 50 years. Based on this, the IMD classifies rainfall into five categories on an all-India scale:
  - Normal or near normal:

Rainfall between 96-104% of LPA.

- Below normal: Rainfall between 90-96% of LPA.
- Above normal: Rainfall between 104-110% of LPA.
- Deficient: Rainfall less than 90% of LPA.
- Excess: Rainfall more than 110% of LPA.

### **El Nino and Its Implications on Agriculture**

- El Nino is a climate phenomenon that occurs irregularly in the tropical Pacific Ocean, characterized by the warming of sea surface temperatures.
- It can have significant impacts

on weather patterns around the world, including India.

- The Oceanic Nino Index (ONI) reached 0.8 degrees Celsius in June, 2023 surpassing the El Nino threshold of 0.5 degrees.
- Global weather agencies forecast El Nino to persist and strengthen through the 2023-24 winter.

### Impacts:

- Temperature Extremes: El Nino is often associated with higher temperatures in some parts of India.

### Pest and Disease Outbreaks:

- El Nino conditions can create a conducive environment for certain pests and diseases that affect crops.

### Impact on Livestock:

- Reduced availability of fodder and water scarcity during El Nino can affect livestock and animal husbandry, leading to lower milk and meat production.

## **The Mines and Minerals (Development and Regulation) Amendment Bill, 2023**

- The Rajya Sabha has passed the Mines and Minerals (Development and Regulation) Amendment Bill, 2023 for making amendments to the Mines and Minerals (Development and Regulation) (MMDR) Act, 1957.

### Background

- The MMDR Act, 1957 was

amended in 2015 to introduce auction-based mineral concession allocation for transparency, create District Mineral Foundation (DMF) for the welfare of affected communities, establish National Mineral Exploration Trust (NMET) to promote exploration, and impose stricter penalties for illegal mining.

- The Act was further amended in 2016 and 2020 to address specific emergent issues and was last amended in 2021 to bring further reforms in the sector, such as, removing the distinction between captive and merchant mines, etc.
- However, the mineral sector required more reforms particularly for increasing exploration and mining of Critical Minerals that are essential for economic development and national security in the country.
- The lack of availability of the critical minerals or concentration of their extraction or processing in a few geographical locations may lead to supply chain vulnerabilities and even disruption of supplies.
- Critical minerals have gained significance in view of India's commitment towards energy transition and achieving Net-Zero emission by 2070.

### Scenario of the Mining Sector in India

- Backbone of Manufacturing:
  - Mining industry plays a crucial role in the country's economy, serving as the

backbone for manufacturing and infrastructure sectors.

- According to the Ministry of Mines, the total value of mineral production (excluding atomic and fuel minerals) during 2021-22 amounted to Rs 2,11,857 crore.
- Scope:
  - India ranks 4th globally in terms of iron ore production and is the world's 2nd largest coal producer as of 2021.
- Combined Aluminium production (primary and secondary) in India stood at 4.1 MT per annum in FY21 becoming the 2nd largest in the world.
- In 2023, the mineral's demand is likely to increase by 3%, driven by expanded electrification and overall economic growth in India.
- India holds a fair advantage in production and conversion costs in steel and alumina. Its strategic location enables export opportunities to develop as well as fast-developing Asian markets.

### **River Devika Rejuvenation Project**

- Recently, Union Minister of State (Independent Charge) Science & Technology sheds light on the progress of the River Rejuvenation Project, Devika.
- The Devika Rejuvenation Project is nearing completion as of August 2023, with substantial

progress achieved in restoring the Devika River's ecological and cultural vitality.

- This initiative, inspired by the Namami Ganga campaign, aims to safeguard the sacred Devika River's purity and health.

### River Devika Rejuvenation Project

- Comprehensive Waste Management:
  - Focuses on Liquid Waste Management.
  - Establishes a network of pipes and manholes connecting households.
  - The primary goal is to ensure the efficient disposal of liquid waste, preventing pollution and maintaining the river's sanctity.

### Complementary Solid Waste Management:

- In addition to liquid waste, the project also encompasses the crucial aspect of Solid Waste Management.

### Financial Allocation Breakdown:

- The project receives investments exceeding Rs 190 crores.
- Allocation is shared between Central and Union Territory (UT) at a 90:10 ratio.
- Empowering Communities through PRIs:
  - Panchayati Raj Institutions (PRIs) play a crucial role in ensuring the success of the project at the grassroots level.
  - The involvement of PRIs enhances community engagement, fosters ownership,

and promotes sustainable development practices.

### Origin:

- Devika River originates from the hilly SuddhaMahadev temple in the Udhampur district of Jammu and Kashmir and flows down towards western Punjab (now in Pakistan) where it merges with the Ravi River.

### India's 6th Minor Irrigation Census

- The Ministry of Jal Shakti has released the 6th census of minor irrigation schemes (with reference year 2017-18), shedding light on the state of irrigation practices across India.
- So far, five censuses were conducted in 1986-87, 1993-94, 2000-01, 2006-07, and 2013-14.

### Key Highlights of the Report

- Total Minor Irrigation Schemes:
  - A total of 23.14 million minor irrigation (MI) schemes have been reported in the country.
  - Among these, 21.93 million (94.8%) are groundwater (GW) schemes, and 1.21 million (5.2%) are Surface Water (SW) schemes.
- Dominant Types of Schemes:
  - Dug-wells have the highest share in MI schemes followed by shallow tube-wells, medium tube-wells and deep tube-wells.
  - The 6th MI census recorded an increase of about 1.42





million MI schemes compared to the previous census.

- Nationally, GW schemes saw a 6.9% increase, while SW schemes increased by 1.2%.

### Leading States in MI Schemes:

- Uttar Pradesh leads in MI schemes in India, followed by Maharashtra, Madhya Pradesh, and Tamil Nadu.
- Maharashtra is the leading State in dug-wells, surface flow and surface lift schemes.
- Uttar Pradesh, Karnataka and Punjab are the leading States in shallow tube-wells, medium tube-wells and deep tube-wells, respectively.
- In SW schemes, Maharashtra, Karnataka, Telangana, Odisha and Jharkhand have the highest share.

### Minor Irrigation scheme

- A minor irrigation scheme is a type of irrigation project that uses surface water or groundwater to irrigate a culturable command area (CCA) of up to 2,000 hectares.
- CCA is an area which can be irrigated from a scheme and is fit for cultivation.
- Minor irrigation schemes are classified into two major categories and six sub-categories.
- Ground Water (GW) schemes encompass dugwells, shallow tube wells, medium tube wells, and deep tube wells.
- Surface Water (SW) schemes

consist of surface flow and surface lift schemes.

- The minor irrigation schemes provide the farmers with controlled and timely irrigation which the new high yielding varieties of seeds demand. These schemes are labour intensive, less implementation period and involve reasonable investments for their commissioning.

### **India's Interest Arctic Region and the Northern Sea Route**

- Murmansk, popularly called the capital of the Arctic Region and the beginning point of the Northern Sea Route (NSR), is witnessing the rising trend of Indian involvement in Cargo traffic.
- In the first seven months of 2023, India got a share of 35% of eight million tonnes of cargo handled by the Murmansk port, which is about 2,000 km north-west of Moscow, Russia.

### Significance of the Arctic for India

- The region constitutes the largest unexplored prospective area for hydrocarbons remaining on the earth. It is estimated that the region may hold over 40% of the current global reserves of oil and gas.
- The Arctic can therefore potentially address India's energy security needs and deficiency of strategic and rare earth minerals.
- However, the government's

Arctic Policy of 2022 mentions that the country's approach to economic development of the region is guided by UN Sustainable Development Goals.

### North Sea Route (NSR)

- The NSR, the shortest shipping route for freight transportation between Europe and countries of the Asia-Pacific region, straddles the Four Seas (Barents, Kara, Laptev and East Siberian Sea) of the Arctic Ocean.
- Running to 5,600 km, the Route begins at the boundary between the Barents and the Kara seas (Kara Strait) and ends in the Bering Strait (Provideniya Bay).
- It offers potential distance savings of up to 50% compared to traditional routes through the Suez or Panama Canals.
- The 2021 Suez Canal Blockage heightened interest in the NSR as an alternative trade route.

### **Scientific Authenticity of Nano Liquid Urea**

- Recently, an opinion paper published in the journal "Plant and Soil" has raised concerns about the scientific validity of Nano Liquid Urea produced by the Indian Farmers and Fertiliser Cooperative (IFFCO).
- The paper questions the claims made about the efficacy and benefits of the product, emphasizing the need for rigorous scientific scrutiny before launching nano fertilizers into the market.

### Liquid Nano Urea

- It is urea in the form of a nanoparticle. It is a nutrient (liquid) to provide nitrogen to plants as an alternative to the conventional urea.
- Urea is a chemical nitrogen fertilizer, white in colour, which artificially provides nitrogen, a major nutrient required by plants.
- It is developed to replace conventional urea and it can curtail the requirement of the same by at least 50%.
- It contains 40,000 mg/L of nitrogen in a 500 ml bottle which is equivalent to the impact of nitrogen nutrient provided by one bag of conventional urea.
- It has been indigenously developed at Nano Biotechnology Research Centre, Kalol, Gujrat in line with Atmanirbhar Bharat and AtmanirbharKrishi.
- India is dependent on imports to meet its urea requirements.
- Liquid Nano Urea has been found effective and efficient for plant nutrition which increases production with improved nutritional quality.
- It can boost a balanced nutrition program by reducing the excess use of Urea application in the soil and make the crops stronger, healthier and protect them from the lodging effect.
- It has a positive impact on the quality of underground water, a very significant reduction in

global warming with an impact on climate change and sustainable development.

### Dibang Multipurpose Project

- NHPC Limited, India's premier hydropower company, has signed an MoU with RITES, a Miniratna Schedule 'A' Central Public Sector Undertaking under the Ministry of Railways, for construction of railway siding at Pasighat, Arunachal Pradesh, for NHPC's 2,880 MW Dibang-MultiPurpose Project.
- Leveraging its core strength, RITES will provide comprehensive and efficient solutions for developing rail infrastructure facilities for NHPC Dibang and other upcoming projects in Arunachal Pradesh.
- Dibang Multipurpose Project is a flood control cum hydroelectric power project planned to be developed on the Dibang River, a tributary of Brahmaputra River, in Arunachal Pradesh.
- It is being developed by India's state-run National Hydroelectric Power Corporation (NHPC).

### Diversion of Paravanar River Course

- Neyveli Lignite Corporation India Limited (NLCIL) has successfully accomplished the permanent diversion of the Paravanar River course to safeguard habitats and agricultural fields from inundation, benefiting local communities and irrigation prospects.



- NLCIL is a Navratna company Central Public Sector Undertaking under the administrative control of the Ministry of Coal.
- Paravanar River Basin which is a leaf-shaped river basin and the second smallest river basin of Tamil Nadu lies within the Cuddalore District of Tamil Nadu.
- The Paravanar River is not a mature river and is seasonal and ephemeral (lasting or used for only a short period of time).

### Hurricane Hilary

- Hurricane Hilary is a major Category 4 hurricane that formed in the eastern Pacific Ocean on 16th August 2023.
- Hurricanes are categorized on the Saffir-Simpson Hurricane Wind Scale, which rates them on a scale of 1 to 5 based on wind speed.
- Hurricanes that reach category three or higher are classified as major hurricanes.
- It is the first tropical storm to hit Southern California since 1939.
- Hurricane Hilary is heading towards California because of a combination of factors, such as a high-pressure system over the western U.S., a low-pressure system over the eastern Pacific, and an El Niño event that warms the ocean water near the equator.

- These factors create a favorable environment for tropical cyclones to form and move northward along the coast of Mexico and Central America.
- However, most of these storms weaken or turn westward before reaching California, because of the cold water, cold currents, and unfavorable winds along the U.S. West Coast.
- Hilary is an exception because it has maintained its strength and followed a more northerly track than usual.

### **CCEA Approves 7 Multi-tracking Projects of the Ministry of Railways**

- The Cabinet Committee on Economic Affairs (CCEA) approved Seven projects of the Ministry of Railways.
- The proposals of Multi-tracking will ease operations and reduce congestion, providing the

much-required infrastructural development on the busiest sections across Indian Railways.

- The projects covering 35 districts in 9 states will expand the existing Indian Railways network by 2339 kms and will generate employment for approximately 7.06 crore man-days for the people of these states.
- These are essential routes for the transportation of varied baskets of commodities such as foodgrains, fertilizers, coal, cement, fly-ash, iron and finished steel, clinkers, crude oil, limestone, edible oil etc.
- These projects align with the fostering climate goals, regional self-reliance, and creating a versatile workforce, enhancing employment opportunities.
- The projects are the result of the PM-Gati Shakti National Master Plan, facilitating seamless connectivity for people, goods, and

services through integrated planning.

### **Lake Titicaca**

- Lake Titicaca is facing a serious threat from climate change and drought. It is the largest freshwater lake in South America and the highest of the world's largest lakes.
- The lake, which lies on the border between Bolivia and Peru, has seen its water levels drop to near-record lows.
- The lack of rainfall and the increased evaporation due to rising temperatures have reduced the inflow and volume of the lake.
- This has resulted in stranded boats, exposed shorelines, and diminished fish populations.
- The lake is also home to more than 500 species of plants and animals, some of which are endemic and endangered.

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## **IX. Environment**

### **Western Tragopan**

- The Western Tragopan (*Tragopan melanocephalus*), Himachal Pradesh's state bird, has faced habitat loss but has shown a gradual increase in population at the Sarahanpheasantry due to conservation efforts.
- The western tragopan, also known as the western horned tragopan, is amongst the rarest of all living pheasants.



- Due to its beautiful plumage and large size, this bird is locally known as 'jujurana' or 'king of birds'.
- It is endemic to the northwest Himalaya, within north Pakistan through Jammu and Kashmir and Himachal Pradesh, to the western part of Garhwal.
- They feed mostly on leaves, shoots and seeds, but also consumes insects and other invertebrates.



## PradhanMantri JI-VAN Yojana

- Recently, the Ministry of Petroleum & Natural Gas provided valuable insights into the PradhanMantri JI-VAN (JaivIndhan- VatavaranAnukoolfasala-washeshNivaran) Yojana in a written reply in the Lok Sabha.

### PradhanMantri JI-VAN Yojana was launched in March 2019.

- It focuses on integrated bio-ethanol projects for Second Generation (2G) ethanol using lignocellulosic biomass and other renewable feedstocks.
- Total financial allocation: Rs. 1969.50 crore (2018-19 to 2023-24).
- Under this scheme the maxi-

imum financial assistance of Rs.150 crore per project for commercial projects and Rs.15 crore per project for demonstration projects has been prescribed for enhancing commercial viability, promoting R&D, and adoption of technologies in the field of production of 2G ethanol.

- Key states benefiting: Punjab, Haryana, Odisha, Assam, Karnataka, Andhra Pradesh.
- Steps beyond PM JI-VAN Yojana to Enhance Bio-ethanol: Imposition of additional excise duty on non-blended fuels, Ethanol Purchase Agreements (EPA), diversification of feedstock, separate price for 2G ethanol, reduced GST on ethanol for EBP Programme.

has sparked optimism among vulture conservationists and experts.



### What are the Key Highlights of the Himalayan Vulture ?

- Conservation Status:
  - IUCN: Near Threatened.
  - CITES : Appendix II.
- The Himalayan vulture is one of the largest Old World vulture species, boasting an impressive wingspan and formidable presence.
- The vulture's powerful hooked beak and keen eyesight make it a proficient scavenger, playing a crucial role in the ecosystem by cleaning up carrion.

### प्रधानमंत्री जैव ईंधन जीवन योजना



## Himalayan Vulture: Gyps Himalayensis

- Recently, the Assam State Zoo in Guwahati has achieved a groundbreaking feat by successfully breeding the elusive

Himalayan vulture in captivity for the first time in India.

- Additionally, the Union Ministry of Health and Family Welfare's decision to prohibit the manufacture, sale, and distribution of ketoprofen and aceclofenac

## Extinction Alert for Vaquita Porpoise

- The International Whaling Commission (IWC) has sounded a dire warning regarding the vaquita porpoise's survival, issuing its first-ever 'extinction alert' on August 7, 2023.
- With a mere 10 individuals left in the Gulf of California, Mexico, the vaquita faces an alarming decline from its population of approximately 570 in 1997.
- Vaquitas are the most endangered species of porpoise. They are known for their distinctive

appearance, characterized by dark rings around their eyes and dark patches on their lips.

- One of the primary threats to vaquita populations is by-catch, where they become unintentionally trapped in gillnets meant for catching another species called totoaba fish (its swim bladders are prized in Chinese cuisine).



### State of India's Birds 2023 Report

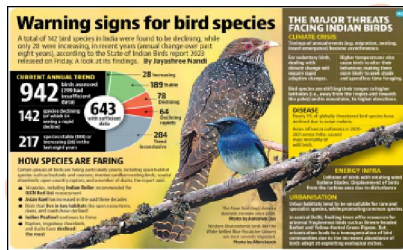
- Recently, the State of India's Birds (SoIB) 2023 was released, which highlighted that despite thriving a few bird species, there is a substantial decline in numerous bird species.
- The SoIB 2023 is a first-of-its-kind collaborative effort of 13 government and non-government organisations, including the Bombay Natural History Society (BNHS), Wildlife Institute of India (WII), and Zoological Survey of India (ZSI), Wildlife Trust of India (WTI), Worldwide Fund for Nature–India (WWF–India) among others, which evaluates the overall conservation status of the most regularly occurring bird species in India.

#### Positive Trends: Increasing Bird Species:

- Despite the general decline,

there are some positive trends among certain bird species.

- The Indian Peafowl, for instance, the national bird of India, is showing a remarkable increase in both abundance and distribution.
- This species has expanded its range into new habitats, including high-altitude Himalayan regions and rainforests in the Western Ghats.
- The Asian Koel, House Crow, Rock Pigeon, and Alexandrine Parakeet are also highlighted as species that have demonstrated a notable increase in abundance since the year 2000.



### Dholpur-Karauli: India's 54th Tiger Reserve

- National Tiger Conservation Authority (NTCA) has given its approval for the establishment of the Dholpur-Karauli Tiger Reserve in the state of Rajasthan.
- It has secured its position as the fifth tiger reserve in the state of Rajasthan following Mukundra Hills, RamgarhVishdhari, Ranthambore, and Sariska.
- Tiger Reserves are notified by State Governments as per provisions of Section 38V of the Wildlife (Protection) Act, 1972 on advice of the National Tiger Conservation Authority.



- Presently, India accommodates a total of 54 Tiger Reserves (with the most recent addition being the Dholpur-Karauli Tiger Reserve).

### Kampala Declaration on Climate Change

- A significant step has been taken by 48 African countries to adopt the Kampala Ministerial Declaration on Migration, Environment, and Climate Change (KDMECC) to address the interconnection between human mobility and climate change on the continent.
- The decision was discussed at a Conference of States co-hosted by Kenya and Uganda. The initiative was supported by the International Organization for Migration (IOM) and the UN Framework Convention on Climate Change (UNFCCC).
- Africa is highly vulnerable to climate change's impacts, leading to increased migration due to extreme weather events.

### Rare Black Eagle Spotted at Chail Wildlife Sanctuary

- A rare black eagle has been sighted for the first time in Chail wildlife sanctuary located in the Solan district, Himachal

Pradesh. This specific type of black eagle has been observed in the Chamba region on prior occasions.

- This eagle is part of the Accipitridae family and stands as the sole member of the Ictinaetus genus.
- They are found in the Indian states of Himachal Pradesh and Jammu & Kashmir, as well as in the forests of the Eastern and Western Ghats in peninsular India.



- As per the IUCN, their conservation status is categorised as "Least Concern".
- The Chail Wildlife Sanctuary is home to a variety of animals, including rhesus macaques, leopards, Indian muntjacs, gorals, porcupines, wild boars, langurs, and Himalayan black bears. It has contributed to the preservation of several endangered species of reptiles and birds.

### **Environmental Challenges in Northeast India**

- Recently, the Meghalaya High court In the case of Re: Cleanliness of Uiam Lake versus State of Meghalaya, 2023, stated that "In the absence of any other employment opportunities the natural beauty

of the State should not be destroyed".

- The Ruling shed light on the challenge of promoting tourism, infrastructure development, and construction while safeguarding the region's natural beauty.

### **Background**

- The Meghalaya High Court was hearing a Public Interest Litigation (PIL) on the cleanliness of the Uiam Lake.
- The Uiam Lake case brought attention to the adverse impact of unregulated construction and tourism on the lake and around the waterbody.
- The court emphasized that economic development shouldn't come at the cost of destroying the region's natural beauty.
- The Meghalaya Water Bodies (Preservation and Conservation) Guidelines, 2023, were criticized for inadequately addressing the issue of unchecked construction around water bodies, highlighting the need for more comprehensive regulations.
- Northeast India is a green belt region due to its abundant natural resources such as oil, natural gas, minerals and freshwater.
- The Garo-Khasi-Jaintia hills and the Brahmaputra valley are some of the most important biodiversity hotspots.

### **Concerns:**

- Though the northeast is indus-

trially backward, deforestation, floods, and existing industries are causing serious problems to the environment in the region.

- Both flora and fauna of the areas are under threat due to Deforestation, Mining, Quarrying, Shifting Cultivation.

### **Legal Framework and Challenges:**

- The Sixth Schedule of the Constitution grants autonomy to District Councils, limiting state authority over land use.
- This autonomy sometimes results in inadequate regulations, as seen in the case of Uiam Lake.
- PILs and judicial activism, under Articles 32 and 226 of the Constitution, have played a pivotal role in enforcing environmental protections.
- The National Green Tribunal's imposing fines on states for environmental violations underscores the role of legal mechanisms in safeguarding the environment.

### **Rising Methane Levels and the Threat to Climate Stability**

- The surge in methane levels in Earth's atmosphere has raised concerns about the planet's ongoing climate transition.
- As methane, a potent greenhouse gas, gains momentum in its growth, it raises questions about whether Earth is undergoing a 'termination-



level transition' similar to past climate shifts.

### Termination-Level Transition

- The concept of a "termination-level transition" refers to a significant and abrupt shift in Earth's climate from one state to another.
- These transitions are marked by rapid and substantial changes in various climatic factors, which can have far-reaching consequences for the planet's ecosystems, weather patterns, and overall environmental stability.
- Earth's climate has undergone termination-level transitions throughout its history.
- These transitions are often associated with the end of ice ages (It was during the Pleistocene, epoch spanning from approximately 2.6 million to 11,700 years ago, which witnessed the most recent instances of global cooling, or ice ages) and the subsequent shift to warmer interglacial periods.
- Various factors, including changes in ocean currents, and atmospheric composition, can trigger termination-level transitions.

### Initiatives to Tackle Methane Emissions

#### Indian:

- **'HaritDhara' (HD):** Indian Council of Agricultural Research (ICAR) has developed an anti-methanogenic feed supplement 'HaritDhara' (HD), which can cut

down cattle methane emissions by 17-20% and can also result in higher milk production.

- **India Greenhouse Gas (GHG) Program:** The India GHG Program led by WRI India (non-profit organization), Confederation of Indian Industry (CII) and The Energy and Resources Institute (TERI) is an industry-led voluntary framework to measure and manage greenhouse gas emissions.
- The programme builds comprehensive measurement and management strategies to reduce emissions and drive more profitable, competitive and sustainable businesses and organisations in India.
- **National Action Plan on Climate Change (NAPCC):** NAPCC was launched in 2008 which aims at creating awareness among the representatives of the public, different agencies of the government, scientists, industry and the communities on the threat posed by climate change and the steps to counter it.
- **Bharat Stage-VI Norms:** India shifted from Bharat Stage-IV (BS-IV) to Bharat Stage-VI (BS-VI) emission norms.

### India Sets Emission Threshold in Green Hydrogen Standard

- The Ministry of New and Renewable Energy (MNRE) recently defined a clear Green Hydrogen Standard, which establishes emission thresh-

olds for hydrogen production categorized as 'green'.

- This significant development positions India at the forefront of global efforts towards sustainable energy solutions.
- Green Hydrogen, and its Emission Threshold

### Definition of Green Hydrogen:

- "Green Hydrogen" shall mean Hydrogen produced using renewable energy, including, but not limited to, production through electrolysis or conversion of biomass.
- Emission Threshold :
  - The MNRE has determined that Green Hydrogen should have a well-to-gate emission of not exceeding 2 kg carbon dioxide (CO<sub>2</sub>) equivalent per kg Hydrogen(H<sub>2</sub>), taken as an average over the last 12-month period.
  - The well-to-gate emission includes water treatment, electrolysis, gas purification, drying and compression of hydrogen.
  - Methodology and Monitoring:
- The MNRE will specify a detailed methodology for measuring, reporting, monitoring, on-site verification, and certification of green hydrogen and its derivatives.
- The Bureau of Energy Efficiency (BEE), Ministry of Power, will serve as the Nodal Authority for accrediting agencies over-

seeing monitoring, verification, and certification of green hydrogen production projects.

### National Green Hydrogen Mission:

- India launched the National Green Hydrogen Mission with the objective of producing 5 million metric tonnes of green hydrogen annually by 2030.
- The mission aligns with a target of about 125 gigawatts of associated renewable energy capacity.
- The program offers financial incentives to promote domestic production of electrolyzers and green hydrogen.
- These incentives are designed to facilitate rapid scale-up, technology development, and cost reduction.

### Student-Led Water Parliament Spurs Water Conservation

- In just one year, ShyamSadan School in Rajasthan's Jodhpur district has witnessed a transformative shift in water practices .
- The school's "JalSansad" (water parliament) was established in mid-2022, engaging students in a range of water conservation activities. Students conduct audits to track water usage, organize awareness campaigns, and maintain digital records.
- Rainwater harvesting irrigates the school's nutrition garden, showcasing innovative integration of water-saving practices.

### MoEFCC Reverses Decision to Merge Autonomous Bodies

- Recently, the Ministry of Environment, Forests and Climate Change (MoEFCC) reversed its decision to establish integrated regional offices by merging key environmental bodies under its umbrella.

#### Initial Proposal of the MoEFCC

- The initial plan, announced during the Covid-19 lockdown, aimed to bring together the Forest Survey of India (FSI), the National Tiger Conservation Authority (NTCA), the Wildlife Crime Control Bureau (WCCB), and the Central Zoo Authority (CZA) under a unified structure.
- This move was intended to streamline operations and create a single point of authority for these organizations.

#### Criticisms:

- It would undermine the independence and authority of these bodies, which have different mandates and roles in environmental governance.
- It would create administrative confusion and chaos, as these bodies have different reporting structures and jurisdictions.
- It would compromise the quality and credibility of their work, as they would be subject to political interference and pressure from the MoEFCC.
- It would dilute the focus and expertise of these bodies, which have specialised functions and

skills in their respective domains.

#### Reversal of Decision:

- The recent notification from the MoEFCC not only scrapped the merger plan but suggests rearranging the current regional offices, and this plan is also facing criticism.
- For instance, the Bengaluru regional office would have had jurisdiction of three states and a Union Territory with different geography and environment: Karnataka, Kerala, Goa, and Lakshadweep.
- Concerns were also raised over the recent plan to merge Project Tiger and Project Elephant, potentially affecting the autonomy and importance of these initiatives.

#### Indian Himalayan Region

- The Himalayan region, renowned for its breathtaking landscapes and cultural heritage, faces a pressing need to address sanitation issues that have long been overshadowed by concerns over illegal construction and surging tourist influx.
- A recent analysis conducted by the Centre for Science and Environment (CSE), highlighted the dire state of sanitation systems in Himalayan states.

#### Major Highlights of the Analysis

- Water Supply and Wastewater Generation: According to Swachh Bharat Mission-Gramin guidelines, each hill town

receives approximately 150 liters per capita of water supply.

- Alarming, 65-70% of this water supply is converted into wastewater.
- Grey Water Management Challenges: In Uttarakhand, merely 31.7% of households are connected to sewerage systems, leaving the majority reliant on on-site sanitation facilities.
- Implications for Soil and Landslides: The Himalayan region's soil makeup, including clayey, loamy, and metamorphosed schist, phyllite, and gneiss rocks, is inherently delicate.
- The excessive seepage of water and wastewater into the ground, as observed in the analysis, can render the soil softer and trigger vulnerability to landslides.

### **Sixth Anniversary of the Minamata Convention**

- The sixth anniversary of the Minamata Convention on Mercury is a reminder of global efforts to combat the toxic effects of mercury.
- On this occasion, the United Nations Environment Programme (UNEP) reflects on the ongoing campaign to eradicate the use of mercury in small-scale gold mining.
- This practice, despite its economic significance, poses severe risks to both miners and the environment due to the hazardous properties of mercury.



### **Minamata Convention**

- The Minamata Convention on Mercury is a global treaty to protect human health and the environment from the adverse effects of mercury and its compounds.
- It was agreed at the fifth session of the Intergovernmental Negotiating Committee in Geneva, Switzerland 2013.
- Controlling the anthropogenic releases of mercury throughout its lifecycle is one of the key obligations under the Convention.

### **Coastal Aquaculture Authority (Amendment) Bill, 2023**

- The Coastal Aquaculture Authority (Amendment) Bill, 2023, recently passed by Parliament. These amendments seek to address ambiguities, streamline administrative processes, and integrate emerging aquaculture practices.

### **What is the Coastal Aquaculture Authority Act, 2005?**

- Coastal aquaculture refers to the practice of cultivating and rearing aquatic organisms, such as fish, shellfish, and aquatic plants, in marine or brackish water environments along the coastlines or in estuaries.

### **Major Provisions Related to Coastal Aquaculture Authority (Amendment) Bill, 2023**

- The amendments aim to bring all coastal aquaculture activities under the purview of the Act, removing ambiguities between different aspects of coastal aquaculture.
- The amendments acknowledge the evolution of environmentally friendly aquaculture practices beyond shrimp farming, incorporating methods like cage culture, seaweed culture, marine ornamental fish culture, and more.
- Facilitating Aquaculture Units within the No Development Zone (NDZ): Establishments like hatcheries, Broodstock multiplication centers (BMC), and Nucleus Breeding Centres (NBC) are now permitted to operate within 200 meters from the High Tide Line (HTL).
- The amendments replace the stringent provision of imprisonment with civil penalties for unregistered coastal aquaculture activities.



### **Environmental Protection and Compliance:**

- The amendments empower the Coastal Aquaculture Authority to establish standards for emission or discharge of effluents



from aquaculture units, holding owners accountable for adhering to these standards.

- The amendments uphold the 'Polluter Pays Principle,' mandating aquaculture unit owners to bear the cost of any environment-related damage or demolition assessed by the Authority.
- The amendments prohibit coastal aquaculture activities in ecologically sensitive areas or areas with significant geo-morphological features, enhancing protection for vulnerable ecosystems.

### Advancing Disease Prevention and Sustainable Practices:

- By explicitly prohibiting the use of antibiotics and pharmacologically active substances, the amendments prioritize the health of aquatic ecosystems and promote environmentally conscious practices.

### India's Wind Energy Potential

- Recently, the Ministry of New and Renewable Energy unveiled noteworthy insights into India's wind energy potential. This revelation sheds light on key states with the highest wind power potential and emphasizes the nation's dedication to sustainable energy practices.
- Additionally, the Ministry outlined innovative strategies aimed at enhancing wind power utilization and ensuring eco-friendly practices in the sector.

### Wind Power Potential in India

- India ranks 4th globally after China, the United States and Germany, in terms of installed wind energy capacity, with 42.8 GW (onshore wind) as of April 2023.
- Wind resource assessment by the National Institute of Wind Energy reveals an estimated wind power potential of approximately 695.5 GW at 120 meters and 1,164 GW at 150 meters above ground level across the nation.

### Government Initiatives for Wind Energy Development

- Policy for Repowering of the Wind Power Projects, 2016:
- Guidelines for Disposal of Fiber Reinforced Plastic (FRP):
- National Wind-Solar Hybrid Policy, 2018:
- National Offshore Wind Energy Policy



### What are Small Modular Reactors (SMRs)?

#### About:

- SMRs are advanced nuclear reactors that have a power capacity of up to 300 MW(e) per unit, which is about one-third of the generating capacity of

traditional nuclear power reactors.

- SMRs, which can produce a large amount of low-carbon electricity, are,
- **Small:** Physically a fraction of the size of a conventional nuclear power reactor.
- **Modular:** Making it possible for systems and components to be factory-assembled and transported as a unit to a location for installation.
- **Reactors:** Harnessing nuclear fission to generate heat to produce energy.
- Their designs incorporate enhanced safety features, reducing the risk of uncontrolled radioactive material release.
- SMRs are designed to operate for 40-60 years with capacity factors exceeding 90%.

### Addressing Air Pollution Through Technological Innovations

- Recently, the Minister of Environment, Forest and Climate Change provided valuable insights into the projects related to deploying various technologies to address Air Pollution in India during a written reply in the Lok Sabha.

### Air Pollution

- Air pollution refers to the contamination of the Earth's atmosphere by harmful substances beyond their natural levels, due to human activities and natural processes.
- Common air pollutants include:

- PM2.5, PM10, Nitrogen Dioxide (NO<sub>2</sub>) and Nitric Oxides (NO<sub>x</sub>), Sulfur Dioxide (SO<sub>2</sub>), Carbon Monoxide (CO) etc.
- Various Technology Based Projects Deployed to Curb Air Pollution
  - Pariyayantra Filtration Units on Buses: A pilot study was initiated where 30 buses were retrofitted with Pariyayantra Filtration units installed on their rooftops.
  - These units were designed to effectively capture dust particles (through filters fitted on vehicles) from the surrounding environment, thereby minimizing the contribution of vehicular movement to air pollution levels.
  - It does not require any power to operate and is equivalent to the filtration provided by 6 room air filters.
  - WAYU Air Purification Units at Traffic Intersections: A total of 54 WAYU Air Purification Units were strategically installed at major traffic intersections in Delhi.
  - These units, designed to purify the air in the immediate vicinity, played a crucial role in reducing the impact of vehicular emissions on air quality.
  - Ionisation Technology for Ambient Air Pollution Reduction: This technology aimed to neutralize pollutants through ionization processes, thereby enhancing air quality in the target areas.
  - The study evaluated the feasibility and impact of ionization technology, potentially opening new avenues for pollution reduction.
  - Installation of Medium/Large-Scale Smog Towers: These towers, acting as substantial air purifiers, targeted the reduction of particulate matter and pollutants on a broader scale.
  - Retrofitting Emission Control Devices in In-Use Vehicles: Older vehicles, especially those adhering to older emission standards like BS III, contribute substantially to air pollution.
  - A pilot project was undertaken to assess the feasibility and effectiveness of retrofitting emission control devices in such vehicles.
  - The project aimed to provide recommendations for emission reduction from these vehicles, aligning with broader efforts to improve air quality.
  - **Indigenous Photonic System for Air Quality Monitoring:** A project by the Department of Science and Technology (DST) focused on developing an indigenous photonic system for real-time remote monitoring of air quality parameters.
  - This initiative aimed to enhance the accuracy and accessibility of air quality data, enabling more informed decision-making in pollution management strategies.
  - Advancements in Electric Vehicle (EV) Autonomous Technology: An autonomous navigation foundation focused on EV-based autonomous vehicles was established under the DST National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS).
  - The integration of autonomous technology in EVs presents an opportunity to optimize driving patterns, reduce traffic congestion, and subsequently lower greenhouse gas emissions.

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## X. Economy - Economy, Socio Economic Issues)

### 1. Economy

#### **Agriculture Infrastructure Fund (AIF)**

- Since the launch of the Agricul-

ture Infrastructure Fund (AIF) in 2020, only 15% of the Rs 1 lakh crore aimed at developing post-harvest infrastructure, has

been distributed.

- AIF aims to provide all-around financial support to the farmers, agri-entrepreneurs, farmer

groups like Farmer Producer Organisations (FPOs), Self Help Groups (SHGs), Joint Liability Groups (JLGs) etc. and many others to create post-harvest management infrastructure and build community farming assets throughout the country.

- It provides support of 3% interest subvention, credit guarantee support through the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme for loans of up to Rs. 2 crore and facility of convergence with other Central and State Government schemes.

### **Vivad se Vishwas – II**

- Recently, the Ministry of Finance launched the scheme, "Vivad se Vishwas II to effectively settle the pending contractual disputes of government and government undertakings.
- The scheme was announced in the Union Budget 2023-24 by the Union Finance Minister.

#### **What is the Vivad Se Vishwas-II Scheme?**

- It is a voluntary settlement scheme to resolve long-standing contractual disputes involving government agencies.
- It is designed specifically for disputes where the Arbitral Award is under challenge in a court.
- Arbitral Award is an award that brings finality to the arbitral proceeding.
- Under the scheme, standardised terms will be introduced, and

graded settlement options will be provided based on the level of pendency of the dispute.



#### **Objectives:**

- The Scheme aims to provide a platform for resolving contractual disputes efficiently and promptly, promoting ease of doing business with the government and encouraging fresh investments in the country.

#### **Implementation:**

- It will be implemented through an online functionality on the Government e-Marketplace (GeM) portal.

#### **Coverage:**

- The scheme will cover all disputes with Central government agencies, including autonomous bodies, public sector banks and financial institutions, central public sector firms, union territories, and the National Capital Territory of Delhi, along with their respective agencies.
- However, organizations such as metro corporations, where the Centre holds a 50% stake, can choose to opt out of the scheme at their discretion, provided they secure board approvals.

#### **Settlement Amount:**

- For cases involving Court awards, the settlement amount

offered to the contractor will be up to 85% of the net amount awarded or upheld by the court, while the same threshold will be "up to" 65% of the net amount in case of arbitral awards.

- Note: Earlier, the Ministry of Finance launched the scheme, "Vivad se Vishwas I – Relief to MSMEs" for providing relief to Micro, Small and Medium Enterprises (MSMEs) for Covid-19 period.

### **National Initiative for Developing and Harnessing Innovations**

- Recently, in a written reply in the Rajya Sabha, the Union Minister of State for Science and Technology highlighted achievement in India's innovation landscape through the NIDHI (National Initiative for Developing and Harnessing Innovations).
- The Department of Science & Technology (DST) launched the NIDHI program in 2016. NIDHI also involves collaboration with other key entities to encourage startups.

#### **What is the National Initiative for Developing and Harnessing Innovations (NIDHI)?**

- The NIDHI is a groundbreaking initiative designed to drive innovation, support startups, and create a thriving entrepreneurial ecosystem in India.
- NIDHI comprises various components that provide a



comprehensive framework for promoting and accelerating innovation-driven enterprises across the nation.

### **Components of NIDHI Program:**

- NIDHI-PRAYAS (Promoting and Accelerating Young and Aspiring Innovators and Startups):
- Focuses on converting innovative ideas into tangible prototypes.
- Offers mentoring and financial support at the Proof-of-Concept level.

### **NIDHI Entrepreneurs-In-Residence (EIR) Program:**

- Provides fellowships to students pursuing entrepreneurship.
- Aims to nurture and encourage young entrepreneurs.
- NIDHI Seed Support Program:
- Offers early-stage seed funding to startups.
- Enables startups to embark on their innovation journey.

### **NIDHI Accelerator Program:**

- Speeds up the investment readiness of startups.
- Equips startups with the resources needed for growth and scaling.
- Technology Business Incubators (TBIs) and Centres of Excellence (CoE):
- Establishes state-of-the-art infrastructure for incubating startups.
- Fosters innovation in technology sectors.
- NIDHI-Inclusive Technology

Business Incubators (iTBI) program:

- Strengthens the innovation and startup incubation ecosystem in Tier II and Tier III cities.
- The iTBI program has helped increase entrepreneurial inclusiveness in terms of geographies, gender and persons with special abilities.

### **Key Players and Collaborators:**

#### **Council of Scientific and Industrial Research (CSIR):**

- NIDHI collaborates closely with CSIR to shape and develop cutting-edge incubation facilities.
- Plays an active role in conceptualizing and developing advanced incubation facilities.
- Supports translating technology and products, benefiting society, industry, and the country.

#### **Department of Biotechnology (DBT) through Biotechnology Industry Research Assistance Council (BIRAC):**

- NIDHI joins hands with DBT and BIRAC to encourage startups, entrepreneurs, and innovators in the biotechnology domain.
- Through strategic collaboration, they drive translational research and facilitate the creation of affordable biotech solutions.
- Supports startups, entrepreneurs, and innovators in developing affordable products and technologies.

- The progress made through BIRACs incubation program include setting up of 75 Incubation Centers supported through BIRAC's BioNEST and E-YUVA (Empowering Youth for Undertaking Value Added Innovative Translational Research) schemes of BIRAC across the country, around 900 innovative projects supported under Biotech Ignition Grant (BIG).

### **Ministry of Defence (MoD):**

- Collaborating with MoD's Innovations for Defence Excellence (iDEX), NIDHI contributes to a dynamic ecosystem for innovation.
- This partnership engages industries, startups, and R&D institutes to drive advancements in defence and aerospace technologies.

### **Ministry of Electronics & Information Technology (MeitY):**

- NIDHI's partnership with MeitY in the Technology Incubation and Development of Entrepreneurs (TIDE 2.0) Scheme empowers tech-driven startups.
- Together, they provide financial and technical support to foster technology-based entrepreneurship.

### **Indian Council of Agricultural Research (ICAR):**

- Collaborating with ICAR's National Agriculture Innovation Fund, NIDHI empowers agri-tech startups.
- Their joint efforts establish Agri-business Incubator (ABIs)

centres, driving innovative solutions in agriculture.

### Department of Science and Technology:

- The foundation of DST was laid on 3rd May 1971 along the model of National Science Foundation (NSF), USA.
- It provides funding and also makes policies and co-ordinates scientific work with other countries.
- It empowers scientists and scientific institutions and also works with a highly distributed system permeating stakeholders ranging from school college, PhD, Postdoc students, young scientists, startups and NGOs working in Science & Technology.

### What is the Status of India's Innovation and Startup Ecosystem?

- India is ranked 40th out of 132 among the top innovative economies globally as per the Global Innovation Index (GII) 2022.
- India has emerged as the 3rd largest ecosystem for startups globally as of 31st May 2023.
- As of June 2023, India is home to 108 Unicorns with a total valuation of USD 340.80 Bn.
- Out of the total number of unicorns, 44 unicorns were born in 2021 and 21 unicorns were born in 2022.
- India's Gross Domestic Expenditure on R&D (GERD) as a percentage of GDP was 0.65%

in 2017-18, which is lower than the global average of 2.2% and much lower than the leading innovators such as Israel (4.9%), South Korea (4.5%), and Japan (3.2%).

- India faces issues such as funding, revenue generation, and supportive infrastructure in its innovation and startup journey.
- India's public sector accounts for about three-fourths of the total R&D expenditure in the country, while the private sector contributes only about one-fourth. This is in contrast to the global trend, where the private sector plays a dominant role in R&D spending.

### What are the Other Initiatives Related to Encourage Startup and Innovation in India?

- Fund of Funds for Startups (FFS) Scheme.
- Credit Guarantee Scheme for Startups (CGSS).
- Startup India Hub.
- Startup India Seed Fund Scheme (SISFS).
- Centres of Excellence.
- Startup India Action Plan (SIAP).

### Excess Cane Payments

- In a significant move, the Government of India has taken a step to provide relief to cooperative sugar mills by allowing them to claim excess cane price payments made to farmers as "business expenditure."

### What is the Issue of Excess Cane Payments?

- Sugarcane is a major crop in India, especially in states like Maharashtra, Uttar Pradesh, Karnataka, and Tamil Nadu.
- The Centre fixes a fair and remunerative price (FRP) for sugarcane every year, which is the minimum amount that sugar mills have to pay to farmers for procuring their cane.
- However, some cooperative sugar mills, especially in Maharashtra, pay more than the FRP to farmers as an incentive or bonus. This is called excess cane payment.
- The excess cane payment has resulted in tax disputes between the cooperative sugar mills and the Income Tax Department.
- The mills claim the excess payment as business expenditure, while the department treats it as a distribution of profits and disallows it as a deduction.

### How has the Government of India Resolved the Issue of Excess Cane Payments?

- In the 2015-16 Union Budget, the Government of India introduced an amendment to the Finance Act that allowed cooperative sugar mills to claim excess cane payment as deduction for computing their business income. However, this was applicable only from the 2016-17 assessment year onwards.
- In the 2023-24 Union Budget, the Government of India

extended the benefit of deduction to all financial years prior to 2015-16. This was done by amending Section 155 of the Income Tax Act .

- The move is expected to provide relief of almost Rs 10,000 crore to cooperative sugar mills, against pending tax demands and litigation in respect of payments made before the 2015-16 financial year.

### What is the FRP?

#### About:

- FRP is the price set by the government that sugar mills are obligated to pay to farmers for the sugarcane procured from them.

#### Payment and Agreement:

- Mills are legally required to pay the FRP to farmers for their cane.
- Mills can choose to sign agreements with farmers, allowing them to pay the FRP in installments.
- Delayed payments can attract interest charges of up to 15% per annum, and the sugar commissioner can recover unpaid FRP by attaching properties of the mills.

#### Governing Regulations:

- The pricing of sugarcane is governed by the statutory provisions of the Sugarcane (Control) Order, 1966 issued under the Essential Commodities Act (ECA), 1955.

- According to the regulations, the FRP must be paid within 14 days of cane delivery.

#### Determination and Announcement:

- The FRP is determined based on the recommendations of the Commission for Agricultural Costs and Prices (CACP).
- The Cabinet Committee on Economic Affairs (CCEA) announces the FRP.

#### Factors Considered:

- The FRP takes into account various factors, including the cost of sugarcane production, returns from alternative crops, trends in agricultural commodity prices, availability of sugar to consumers, selling price of sugar, sugar recovery from cane, and income margins for cane growers.

### Inflation And Current Outlook of Indian Economy

- July 2023 witnessed a notable increase in Retail Inflation, reaching 7.44%, creating Goldilocks scenario for India, making investors and savers uncertain about the economic situation.
- A Goldilocks Scenario describes an ideal state for an economy whereby the economy is not expanding or contracting by too much. A Goldilocks economy has steady economic growth, preventing a recession, but not so much growth that inflation rises by too much.

#### GDP Projection:

- The projected GDP (Gross Domestic Product) growth for 2023-24 is 6.5%, while the benchmark Sensex index stands currently at 65,000 points.
- However, if inflation remains high, it could affect returns on stock market investments.
- Gold and bank deposit rates, on the other hand, are expected to remain stable in the coming months.

#### Inflation Projection:

- The Reserve Bank of India (RBI) anticipates inflation to stay above 5% until the first quarter of 2024-25, potentially reaching 6.2% in the current quarter (July-Sept) 2023, exceeding the RBI's comfort level of 4%.

### Stalled Real Estate Projects in India

- Recently, a committee chaired by former National Institution for Transforming India (NITI Aayog) CEO Amitabh Kant, formed by the Ministry of Housing and Urban Affairs (MoHUA), has put forward a series of recommendations to address the issue of stalled legacy real estate projects in India.
- The committee's formation was recommended by the Central Advisory Council under the Real Estate (Regulation and Development) Act, 2016.
- According to the Indian Banks' Association, more than 4.12 lakh "stressed dwelling units" exist across India, of which



around 2.4 lakh units are located in the National Capital Region (NCR), mainly in Noida and Greater Noida.

### Model Package for Stalled Projects:

- Introduction of a “model package” designed for stalled projects in specific regions, starting with Noida and Greater Noida.
- Other states are encouraged to develop similar packages tailored to their respective stalled projects.

### Zero Period:

- During this period, developers would be exempted from interest and penalty payments, acknowledging the unforeseen challenges that led to project delays.

### Partial Surrender Policy:

- Inclusion of a partial surrender policy within the model package.
- Aims to offer flexibility in project planning and execution while optimizing resource utilization.

### Subsidized Interest Rates:

- Suggestion of a “subsidized interest rates or guarantee scheme” similar to those benefiting the MSME sector.
- Designed to incentivize financial institutions to provide funding for stalled real estate projects.
- Aims to improve liquidity and funding access for developers struggling with stalled projects.

### Establishment of a “Guarantee Fund”:

- Proposal for the creation of a dedicated “guarantee fund” analogous to the one established for the MSME sector.
- Aimed at enhancing financial support and investor confidence in the real estate sector.
- The MoHUA is tasked with drafting the fund scheme and forwarding it to the Ministry of Finance.

### India’s Ageing Workforce

- Despite having the largest youth population globally, India’s workforce is ageing rapidly according to an analysis of India’s workforce using data from CMIE’s (Centre for Monitoring Indian Economy)’s Economic Outlook, which is a concerning trend.
- An ageing workforce basically means that if one looks at all the employed people in India, the share of young people is going down while the share of those closer to 60 years of age is going up.

### Key Highlights of the Analysis

- Age Groups and Workforce Composition:
- The analysis categorizes the workforce into three distinct age groups to better understand the ageing workforce trend,
- Aged 15-29 years: The share of this age group in the total

workforce has decreased from 25% in 2016-17 to 17% in the financial year 2022-23.

- Aged 30-44 years: The share of individuals in this age group has also declined from 38% to 33% over the same period.
- Aged 45 years and older: This age category’s share has grown significantly, increasing from 37% to 49%.

### Falling Employment Rates Among Youth:

- While the youth population has grown by 2.64 crore (from 35.49 crore in 2016-17 to 38.13 crore in 2022-23), the number of employed individuals in this group has fallen by a staggering 3.24 crore.
- Consequently, the employment rate for this age group has plummeted from 29% to 19% over seven years.

### Production Linked Incentive Scheme

- Recently, a debate has emerged over the effectiveness of India’s Production-Linked Incentive (PLI), an Electronics Manufacturing scheme, suggesting it generates import-dependent assembly jobs rather than fostering Self-Sufficiency in manufacturing and economic growth.

### Production Linked Incentive Scheme (PLI)

#### About:

- The PLI scheme was conceived to scale up domestic manufac-

turing capability, accompanied by higher import substitution and employment generation.

- Launched in March 2020, the scheme initially targeted three industries:
- Mobile and allied Component Manufacturing
- Electrical Component Manufacturing and
- Medical Devices.
- Later, it was extended to 14 sectors.
- In the PLI scheme, Domestic and Foreign companies receive financial rewards for manufacturing in India, based on a percentage of their revenue over up to five years.

#### Targeted Sectors:

- The 14 sectors are mobile manufacturing, manufacturing of medical devices, automobiles and auto components, pharmaceuticals, drugs, specialty steel, telecom & networking products, electronic products, white goods (ACs and LEDs), food products, textile products, solar PV modules, advanced chemistry cell (ACC) battery, and drones and drone components.

#### Incentives Under the Scheme:

- The incentives given, are calculated on the basis of incremental sales.
- In some sectors such as advanced chemistry cell batteries, textile products and the drone industry, the incentive to be given will be calculated on the

basis of sales, performance and local value addition done over the period of five years.

- The emphasis on R&D investment will also help the industry keep up with global trends and remain competitive in the international market.

#### Success in Smartphone Manufacturing:

- In FY 2017-18, mobile phone imports were USD 3.6 billion, while exports were a mere USD 334 million, resulting in a -USD 3.3 billion trade deficit.
- By FY 2022-23, imports reduced to USD 1.6 billion, while exports surged to nearly USD 11 billion, yielding a positive net exports of USD 9.8 billion.

#### Issues with the PLI Scheme

- Assembly vs. Value Addition:
  - The subsidy in the scheme for Mobile and allied Component Manufacturing is paid only for finishing the phone in India, not on how much value is added by manufacturing in India, turning out that very little apart from assembly is done in India.
  - So India still imports much of what goes into the mobile phones.
- The imports of mobile phone components — including display screens, cameras, batteries, printed circuit boards — shot up between FY21 and FY23.
- Incidentally, these are the same

two years when mobile phone exports jumped the most.

#### WTO Constraints and Limited Value Addition:

- WTO rules prevent India from tying PLI subsidies to domestic value addition.
- Although India's aspiration to make chips is sound, chips are complex components.
- The absence of significant domestic value addition likely stems from these constraints.

#### Vague Disbursal of Incentives:

- While an Empowered Committee has been formed to oversee the scheme and handle fund disbursement for different sectors, the process of awarding incentives lacks clarity.
- There are no well-defined criteria or standardized parameters that ministries and departments use to determine the allocation of these incentives, raising concerns about the fairness and effectiveness of the scheme.

#### Lack of a Centralized Database:

- The lack of a centralized database that captures information like increase in production or exports, number of new jobs created etc. make the evaluation process an administrative complexities.
- This information ambiguity impacts transparency and can lead to malfeasance, further widening the fault lines and weakening the policy structure.



### Way Forward

- The government must assess PLI's effectiveness, considering job creation, cost per job, and reasons for limited success.
- Extending the scheme to new sectors requires understanding its limitations and addressing underlying issues.

### Public Tech Platform for Frictionless Credit

- The Reserve Bank of India (RBI) has initiated a pilot programme aimed at evaluating the feasibility of a 'Public Tech Platform for Frictionless Credit', seeking to facilitate seamless and efficient credit delivery by lenders for Credit Appraisal, and therefore boosting Financial Inclusion in India.
- The initiative comes as part of RBI's developmental and regulatory policies and was introduced following the Monetary Policy Committee (MPC) meeting in August 2023.
- Note: Frictionless credit is a borrowing approach that seeks to streamline the lending process for consumers. Unlike the traditional credit systems, where individuals need to go through extensive paperwork, credit checks, and lengthy approval procedures, frictionless credit

promises a smoother and faster experience.

### About:

- Developed by the Reserve Bank Innovation Hub (RBIH), It is an end-to-end digital platform that will have an open architecture, open Application Programming Interfaces (APIs), and standards to which all banks can connect in a "Plug and Play" Model.
- The public tech platform seeks to make this process seamless by providing all the required information in one place to facilitate credit.

### Process:

- The process of delivering credit through digital means involves Credit Appraisal, which evaluates the borrower's ability to repay the loan and adhere to the credit agreement.

### This process rests on three pillars:

- Adverse selection (information asymmetry between borrowers and lenders)
- Exposure risk measurement
- Default risk assessment.

### Key Data Sources:

- The platform would integrate data from central and state governments, Account Aggregators (AA), banks, credit information companies, and digital identity authorities.
- This consolidation would eliminate hindrances and streamline rule-based lending processes.

### Scope and Coverage:

- **Diverse Loan Types:** The platform's scope encompasses digital loans beyond KCC (Kisan Credit Card), including dairy loans, MSME loans without collateral, personal loans, and home loans.
- **Data Integration:** It will link with various services like Aadhar e-KYC, Aadhar e-signing, land records, satellite data, PAN validation, transliteration, account aggregation by account aggregators (AAs), and more.

### Benefits and Outcomes

- **Enhanced Credit Portfolio Management:**
  - The platform's data consolidation will enable improved credit risk assessment and efficient credit portfolio management.
- **Improved Access to Credit:**
  - Access to accurate information supports informed and swift credit assessments. This expansion of credit availability benefits borrowers by lowering the cost of capital access.
- **Reduced Operational Costs:**
  - The platform addresses operational challenges such as multiple visits and documentation requirements, leading to cost reduction for both lenders and borrowers.
- RBI's survey indicated that processing of farm loans took two to four weeks and cost about 6% of the loan's total value.



### Efficiency and Scalability:

- The platform's streamlined processes lead to quicker disbursement and scalability, resulting in a more efficient credit ecosystem.
- Significance of Financial Inclusion and Access to Credit in Economic Growth

### Reduced Income Inequality:

- Financial inclusion ensures that all segments of society, including low-income individuals and marginalized groups, have access to essential financial services.
- This empowers them to save, invest, and access credit, reducing income disparities and fostering more equitable economic growth.

### Entrepreneurship and Innovation:

- Access to credit enables aspiring entrepreneurs to start and expand businesses.
- This leads to increased job creation, innovation, and economic diversification, all of which contribute to higher GDP (Gross Domestic Product) growth and overall prosperity.

### Poverty Alleviation:

- Financially excluded individuals often face barriers to economic progress.
- Providing access to credit allows them to invest in education, healthcare, and income-generating activities, breaking

the cycle of poverty and enhancing overall human development.

### Infrastructure Development:

- Adequate credit access is essential for funding large-scale infrastructure projects. These projects, such as transportation, energy, and communication networks, provide the necessary backbone for sustained economic growth.

### Rural Development:

- In agrarian economies, access to credit can enable farmers to invest in modern agricultural practices, leading to increased productivity and rural development. This, in turn, supports overall economic growth.

### Financial Stability:

- A well-functioning credit market contributes to financial stability by diversifying funding sources for individuals and businesses. It reduces dependence on informal lending, which can be more volatile and risky.

### **RBI Study on Investment Trends in India for FY 2022-23**

- The Reserve Bank of India's (RBI) recent study sheds light on the state-wise distribution of capital investments in India during the fiscal year 2022-23.
- The study examines the geographical and sectoral trends that shape the landscape of project funding across the country.

### Highlights of the Study

- Investment Surge and Capital Outlay:
  - Credit offtake soared by 19.7% in July 2023, amidst a 250 basis points hike in the repo rate by the RBI since April 2022, indicating robust investment momentum.
  - The aggregate capital outlay reached an impressive of over Rs 3.5 lakh crores, reflecting a significant increase compared to the previous years.

### State-wise Share in Total Project Costs:

- Top Performers:
  - Uttar Pradesh emerges as the frontrunner, accounting for the highest share of 16.2% in the total cost of projects sanctioned by banks and financial institutions.
  - Following closely are Gujarat (14%), Odisha (11.8%), Maharashtra (7.9%), and Karnataka (7.3%), showcasing a dynamic distribution of investments.
- Bottom Performers:
  - Kerala, Goa, and Assam secured the lowest shares, with Kerala receiving just 0.9% of the total investment plans.
  - Haryana and West Bengal also fell within the 1% bracket of the total investment projects.

- Sectors Driving Investments:
  - The infrastructure sector played a pivotal role, accounting for 60% of the total project cost in 2022-23.
  - Notably, road and bridge projects within the infrastructure sector garnered significant attention, benefiting from the “Bharatmala” initiative.

### Factors Influencing Investment Momentum:

- Government capital expenditure, rising business optimism, and a revival of private capital expenditure in select sectors have fueled investment activity.
- Despite the upward revision of the repo rate, credit offtake experienced robust growth, reflecting the confidence in investment opportunities.

### Outlook and Future Trends:

- The RBI study provides a positive outlook for private investment, attributing the surge to increased government spending, improved business sentiments, and policy support.
- Greenfield projects, constituting 93.1% of total project costs financed by banks and financial institutions, underscore the focus on new initiatives.
- Greenfield project refers to investment in a manufacturing, office, or other physical company-related structure or group of structures in an area where no previous facilities exist.

### Reforms for Secure Digital Connectivity

- In order to promote Safe Telecom Utilisation, the government has introduced two reforms for mobile user protection to promote a cleaner and safer Digital Ecosystem.
- The two reforms, KYC (Know Your Customer) Reforms and Point of Sale (POS) registration Reform. These two reforms are in the direction of earlier reforms introduced with the launch of Sanchar Saathi, a citizen-centric portal that has empowered India’s fight against the menace of cybercrimes and financial frauds.

### The Reforms

- KYC Reforms: KYC reforms play a pivotal role in safeguarding subscribers of telecom services from potential frauds and bolstering public confidence in the digital ecosystem.
- QR Code Scanning of Aadhaar: To prevent misuse of printed Aadhaar, demographic details are captured by scanning the QR code of printed Aadhaar during the KYC process.
- Mobile Number Disconnection: Disconnected mobile numbers will not be allocated to new customers for 90 days after disconnection, preventing immediate reuse.
- Complete KYC for SIM Replacement: Subscribers must complete KYC when replacing their SIM cards.

- Biometric Authentication: In addition to thumbprints and iris-based authentication, facial-based biometric authentication is permitted in Aadhaar E-KYC.
- Business Connections: Entities such as companies, organizations, trusts, and societies can obtain mobile connections after completing KYC for all end-users. Activation occurs only after successful KYC and physical verification of the entity’s premises.
- Point-of-Sale (POS) Registration Reforms: This reform aims to ensure the integrity of the distribution network by mandatorily registering Franchisees, Agents, and Distributors (PoS).
- The process involves robust verification and written agreements between PoS and Licensees. Any PoS engaged in illegal activities will be terminated and blacklisted for three years.

### Sanchar Saathi Portal

- The Sanchar Saathi portal, developed by the Centre for Development of Telematics (C-DOT) under the Department of Telecommunications (DoT), is revolutionizing the telecom sector in India.
- It was launched on World Telecommunication Day (17th May 2023).

### Objective:

- The primary objective of the Sanchar Saathi portal is to address various fraudulent activities prevalent in the telecom industry, such as identity theft,

- forged KYC, and banking fraud.
- By leveraging advanced technologies and frameworks, the portal aims to provide users with a secure and trustworthy telecommunication experience.
- Utilizes facial recognition and data analytics techniques.
- Analyzes connections obtained through paper-based KYC documents.

#### Impact:

- Over 40 lakh fraudulent connections were identified and over 36 lakh were disconnected using the portal.
- Provides a secure and trustworthy telecommunication experience for users.
- Protects against identity theft, forged KYC, mobile device theft, and banking fraud.

#### India's Foreign Exchange Reserves

- India's foreign exchange reserves have increased by USD 708 million to USD 602.16 billion for the week ended 11th August 2023, according to the latest data from the Reserve Bank of India.
- Foreign exchange reserves are assets held on reserve by a central bank in foreign currencies, which can include bonds, treasury bills and other government securities.



#### India's Forex Reserve include:

- Foreign Currency Assets, Gold reserves, Special Drawing Rights, and Reserve position

with the International Monetary Fund (IMF).

- FCAs are assets that are valued based on a currency other than the country's own currency.
- The country's forex reserves reached an all-time high of USD 645 billion in October 2021.

#### MPC Recent Decisions: Repo, Inflation Projection, I-CRR

- The Monetary Policy Committee (MPC) of the Reserve Bank of India (RBI) has recently opted to maintain the policy repo rate at 6.5%, while simultaneously revising its projection for retail inflation in the current fiscal year (2023-24).
- Additionally, a temporary 10% Incremental Cash Reserve Ratio (I-CRR) is imposed on banks to absorb excess liquidity.

#### Key Decisions of the MPC

- Repo Rate Unchanged: The RBI decided unanimously to keep the policy repo rate unchanged at 6.5% to balance economic growth and inflation control.
- Inflation Projection Increased: The projection for retail inflation in the current fiscal year has been raised by 30 basis points to 5.4%.
- This adjustment acknowledges the upward trend in headline inflation, driven in part by rising vegetable prices.
- While the spike in vegetable prices is expected to be temporary, external factors like possible El Nino weather con-

#### Reforms Introduced:

#### CEIR (Central Equipment Identity Register):

- Implemented to block stolen or lost mobile phones.
- Users can submit IMEI numbers along with a copy of the police complaint to verify and block stolen devices.
- Integrated with Telecom Service Providers and Law Enforcement Agencies.
- Prevents stolen devices from being used in Indian networks and allows tracing by law enforcement when necessary.

#### Know Your Mobile Connections:

- Allows users to check mobile connections registered in their name.
- Enables identification of unauthorized or fraudulent connections.
- Users can report fraudulent or unrequired connections, triggering re-verification and termination of reported connections.
- ASTR (Artificial Intelligence and Facial Recognition powered Solution for Telecom SIM Subscriber Verification):
- Developed to identify subscribers who obtain connections using fraudulent or forged documents.



ditions and global food prices pose potential risks.

- Projected GDP Growth: The MPC retained its projection for real GDP growth in 2023-24 at 6.5%.
- Incremental Cash Reserve Ratio (I-CRR): Effective from 12th August 2023, scheduled banks are required to maintain an I-CRR of 10% on the net increase in their demand and time liabilities between May 19, 2023, and July 28, 2023.
- This move aims to absorb surplus liquidity, particularly due to the recent demonetisation of Rs. 2000 notes.
- The RBI opted for I-CRR over a general CRR increase to prevent penalizing banks for their current deposits and to limit impacts on credit growth and the economy.
- A CRR rise would have restricted loan funds and raised borrowing costs. I-CRR only targets excess liquidity from demonetization without disrupting regular banking operations.
- The existing CRR remains unchanged at 4.5%.
- Also, the RBI clarified that the I-CRR is a temporary measure. In 2016, during the time of demonetisation, a 100% I-CRR was employed.
- RBI's Move Related to the HDFC Ltd-HDFC Bank Merger
- Speculation: The speculation is that the RBI's decision to introduce this additional CRR could be an attempt to offset

any potential profits that HDFC Bank might have made during the grace period after the merger.

- Background: HDFC Ltd was not a bank, but it could raise deposits. However, it was not subject to the CRR rule. HDFC Ltd then merged with HDFC Bank, bringing in large amounts of deposits into the banking system.
- After the merger, HDFC Bank was granted a grace period during which it did not have to deposit the usual 4.5% CRR on its newfound deposits.
- This grace period allowed the bank to potentially invest these significant deposits elsewhere and earn profits from these investments.
- The RBI's recent move of incremental CRR implies that banks, including HDFC Bank, have to keep an extra 10% of these deposits with the RBI.

### Other Measures that RBI can Adopt to Suck Excess Liquidity

- Reverse Repo Operations: The RBI can conduct reverse repo operations, where it absorbs excess liquidity from banks by offering them government securities in exchange for funds.
- However, recently RBI opted for using I-CRR instead of raising the reverse repo rate because increasing the reverse repo rate would have also increased the repo rate which would have tightened monetary policy and hampered economic recovery.

- Foreign Exchange Operations: Selling foreign exchange reserves can reduce liquidity in the domestic currency market.
- This approach can be used cautiously, as it can impact the exchange rate and international trade.
- Moral Suasion: The RBI can communicate with banks and financial institutions to encourage them to voluntarily manage their liquidity positions and curtail excessive lending.

### Implications of Excess Liquidity in India

- Positive Implications:
  - Lower Interest Rates: Excess liquidity can lead to lower interest rates in the economy.
  - When there is an abundance of funds, banks and financial institutions tend to lower their lending rates to attract borrowers.
  - This can stimulate borrowing and investment activities, promoting economic growth.
  - Stimulating Investment: With lower interest rates, businesses may find it cheaper to borrow and invest in expanding their operations, launching new projects, and creating jobs.
  - This can have a positive impact on economic activity and job creation.
- Negative Implications:
  - Inflationary Pressure: Excess liquidity can contribute to

inflationary pressures in the economy.

- When there is too much money chasing a limited supply of goods and services, prices can rise.
- This can erode the purchasing power of consumers and reduce their overall standard of living.
- Exchange Rate Volatility: Sudden inflows of foreign capital can lead to currency appreciation, making exports more expensive and imports cheaper.
- On the other hand, outflows can lead to currency depreciation, which can impact trade balances and external debt.
- Asset Price Bubbles: While excess liquidity can boost asset prices, it can also lead to the formation of speculative bubbles.
- If the increase in asset prices is not supported by fundamentals, it could result in a sudden collapse of prices, leading to financial instability.
- Income Inequality: The benefits of excess liquidity, such as increased asset prices, might disproportionately benefit the wealthy who have more exposure to these assets.
- This can exacerbate income inequality in the economy.

### High Inflation and High Liquidity be Managed Simultaneously

- Interest Rate Adjustment: The RBI can consider a cautious approach to interest rate adjustments.
- While high liquidity might suggest lowering interest rates, the focus should also be on curbing inflation.
- A balanced approach might involve incremental interest rate hikes to manage both liquidity and inflation concerns.
- Open Market Operations (OMOs) :The RBI can engage in controlled Open Market Operations, which involve selling government securities to counterbalance the liquidity injected into the system.
- This can help mitigate the inflationary effects of excessive liquidity.
- Targeted Fiscal Measures: The Indian government can adopt targeted fiscal policies to address sectors contributing to inflation.
- For instance, investing in agricultural infrastructure and supply chain improvements can help stabilize food prices, a current major driver of inflation in India.

### Cabinet Approves Mutual Recognition Arrangement

- Recently, the Union Cabinet has granted approval for the Mutual Recognition Arrangement (MRA) between the Central

Board of Indirect Taxes and Customs (CBIC), Department of Revenue, Government of India, and the Department of Home Affairs incorporating the Australian Border Force of the Australian Government.

- This significant arrangement seeks to offer reciprocal advantages to accredited and trusted exporters from both nations in the streamlined customs clearance of goods.
- Aligned with the World Customs Organisation's Framework of Standards to Secure and Facilitate Global Trade (SAFE Framework) of Standards, this MRA strengthens global trade security while enhancing trade facilitation.
- By bringing the Australian Trusted Trader Program (ATTP) and the Indian Authorized Economic Operator Program (IAEOP) under mutual recognition, the arrangement aims to bolster trade relations between India and Australia.

### Digital India RISC-V (DIR-V) Program

- Recently, the Union Minister of Electronics & IT addressed the Digital India RISC-V (DIR-V) Symposium organized by IIT Madras in Chennai.
- The one-day symposium, organized by IIT Madras, emphasized the government's vision for DIR-V which currently aims to build a robust ecosystem for RISC-V with effective public-private partnerships and

collaborations with premiere academic institutions.

### Digital India RISC-V (DIR-V) Program

- The DIR-V Program is a forward-looking initiative that aims to uplift India's semiconductor ecosystem.
- Its primary goal is to promote indigenous innovation in the field of microprocessors, laying the foundation for self-reliance.
- The program emphasizes three key principles: innovation, functionality, and performance, shaping its direction for the future.

### Navigating Complex Digital Realities:

- The program acknowledges the increasing demand for silicon chips in today's digitized world.
- As emerging technologies like 5G and 6G reshape the digital landscape, DIR-V anticipates finding applications in various areas such as cloud services, Internet of Things(IoT), and sensors.

### Integral Role in High-Performance Computing:

- DIR-V is positioned at the heart of India's aspirations for high-performance computing.
- Collaborations with organizations like the Center for Development of Advance Computing (C-DAC) and public-private partnerships will ensure that DIR-V plays a pivotal role in these ambitious goals.

### RISC-V:

- The term RISC stands for "reduced instruction set computer" which executes few computer instructions whereas 'V' stands for the 5th generation.
- It is an open-source hardware ISA (instruction set architecture) used for the development of custom processors targeting a variety of end applications.
- It also enables designers to create thousands of potential custom processors, facilitating faster time to market. The commonality of the processor IP also saves on software development time.
- RISC-V processors find versatile applications in wearables, IoT, smartphones, automotive, aerospace, and more, offering power efficiency, performance customization, and security. They excel in space-constrained designs and complex computational tasks.
- The RISC was invented by Prof. David Patterson around 1980 at the University of California, Berkeley.

### Centre for Development of Advanced Computing (C-DAC):

- It is the leading R&D institution under the Ministry of Electronics and Information Technology (MeitY), specializing in IT, Electronics, and related areas.
- Established in 1988 to counter the denial of supercomputer imports, C-DAC's journey began with the development of

India's first Supercomputers PARAM.

- C-DAC plays a pivotal role in India's IT revolution by continuously innovating and leveraging its expertise to develop and deploy IT products and solutions aligned with the nation's policies and market needs.

### India's Current Account Deficit Narrows Amid Trade Shifts

- India's Current Account Deficit (CAD) is being influenced by shifts in trade patterns. The deficit is expected to decrease to around USD 10 billion or 1% of the GDP in the April-June quarter of 2023-24, down from USD 18 billion or 2.1% in the same period of 2022-23.
- CAD is a crucial economic indicator that quantifies the difference between a country's earnings from foreign trade and its expenditures on imports of goods and services, including transfer payments.
- A CAD arises when a nation's imports exceed its exports, leading to an outflow of currency and often necessitating foreign borrowing to bridge the gap.
- A low CAD can be seen as a positive economic indicator because it often implies that the country's economy is self-sustaining and is able to finance its external commitments without straining its resources.
- It can also indicate that the country is competitive in inter-



national trade and has a balanced approach to its imports and exports.

### Logo for Tamil Nadu Global Investors' Meet 2024

- Tamil Nadu Chief Minister unveiled the 'logo' for the state government's ambitious Global Investors Meet
- It is scheduled to be held on January 7 and 8 in 2024.
- The logo symbolizes the Tamil word 'Tha' depicting mother tongue Tamil and also the state -- Tamil Nadu flourishing in all parameters.



- The logo's colors and aesthetics reflect digital transformation and industrialization, an urbanized society and rapid industrial growth.

### Tamil Nadu Startup Thiruvizha 2023

- Startup TN, hosted the 'TamilNadu Startup Thiruvizha 2023' event at the CODISSIA Trade Fair Complex in Coimbatore.
- Startup TN is the State's nodal agency for Startup and Innovation.
- It is highlighting the government's efforts to assist entrepreneurs.



- It serves as a venue for networking, learning, and presenting cutting-edge products and solutions.

### Startups in Tamil Nadu

- The number of start-ups registered in Tamil Nadu has tripled in the last two-and-a-half years.
- The number of registered start-ups in the State in March 2021 was 2,300 and it stood at over 6,800 now.
- The State government gives seed fund (TANSEED) to some start-ups.
- Start-ups in Chennai attracted Rs. 150 crore in investments.
- This is 71% more than the previous year.
- A call centre (dial 155343) was launched for start-ups recently.

## 2. Socio Economic Issues

### Relief for Displaced School Children Amid Manipur Ethnic Violence

- The ethnic violence in Manipur has led to the displacement of over 14,000 school children, prompting swift measures by the Ministry of Education to ensure their continued education.
- The ethnic clashes in Manipur were ignited by a 'Tribal Solidarity March' on May 3, 2023, organized as a response to the demand for Scheduled Tribe (ST) status by the Meitei community.

- The Meitei people are also known as Manipuri people.
- Their primary language is the Meitei language, which is also called Manipuri and is the only official language of Manipur.
- They are predominantly settled in the Imphal Valley, although a significant number reside in other Indian states, such as Assam, Tripura, Nagaland, Meghalaya, and Mizoram.
- The Meitei people are divided into clans, and members of the same clan do not intermarry.

### Rising Psychiatric Cases in CAPFs

- The Ministry of Home Affairs recently reported a concerning increase in psychiatric patients within the Central Armed Police Forces (CAPFs). The number of cases surged from 3,584 in 2020 to 4,940 in 2022, marking a nearly 38% rise in reported psychiatric conditions.
- Psychiatric cases refer to individuals who are experiencing mental health disorders or conditions that require diag-

nosis, treatment, and care from mental health professionals.

- These cases encompass a wide range of mental health issues, including but not limited to:
- Depression: Persistent feelings of sadness, hopelessness, and loss of interest in activities.
- Bipolar Disorder: Cycles of extreme mood swings, including manic and depressive episodes.
- Schizophrenia: A severe mental disorder characterized by hallucinations, delusions, and disorganized thinking.
- Also, the rising number of personnel opting for voluntary retirement in the post-pandemic period remains a concern. In 2022, a record 11,211 personnel took voluntary retirement, signaling possible dissatisfaction and burnout among the workforce.

### **Changing Youth Concerns and Aspirations**

- In the ever-evolving landscape of youth concerns and aspirations, a recent survey conducted by Lokniti-CSDS across 18 states in India sheds light on the shifting priorities of the young population.
- The survey highlights the rising prominence of unemployment and price rise as pressing issues, the intersection of these concerns with economic classes and gender, and the evolving preferences in job aspirations.

### **Major Highlights of the Survey**

- Unemployment, Price Rise and

Gender Disparity:

- A 7% point increase in the share of respondents identifying price rise as a primary concern.
- 40% of highly educated respondents (graduate and above) pointing to unemployment as their most pressing concern.
- 27% of non-literate individuals expressed concern about unemployment, attributed to their flexibility in undertaking various job opportunities.
- Poverty and price rise emerged as more prominent issues for young women, regardless of their economic background.

### **Occupational Diversity: Insights into Youth Employment:**

- Almost half (49%) of the respondents were engaged in some form of work.
- 40% held full-time jobs, while 9% worked part-time.
- 23% of employed youth were self-employed, showcasing a significant entrepreneurial inclination.
- Professions such as doctors and engineers constituted 16% of the workforce.
- Agriculture and skilled labor comprised 15% and 27% respectively.
- Job Aspirations and Preferences:
- 16% of respondents expressed a preference for jobs in the health sector.
- The education sector was the second most preferred, chosen by 14% of youth.

- Science and technology-related jobs, along with starting their own businesses, garnered 10% support each.
- Government jobs continued to hold allure, with 60% of respondents opting for them when given a choice between a government job, a private job, or starting their own business.
- The preference for self-employment has grown steadily from 16% in 2007 to 27% in 2023, indicating an increasing entrepreneurial inclination among the youth.

### **Combating Ragging in Educational Institutions**

- The issue of ragging, a persistently troubling phenomenon in Indian educational institutions, has once again captured national attention due to a recent incident at Jadavpur University.
- The Supreme Court of India has taken significant steps to address this issue through various cases and guidelines.

### **Current State of Anti-ragging Measures in India**

- Defining Ragging: Supreme Court's Perspective
- It described ragging as any disorderly conduct that involves teasing, treating, or handling fellow students with rudeness, engaging in undisciplined activities causing annoyance or psychological harm, or generating fear among junior students.
- The Court also noted that the motives behind ragging often

include deriving sadistic pleasure, showcasing power, authority, or superiority by seniors over freshers.

### Key Guidelines Issued by the Supreme Court:

- The Supreme Court guidelines emphasized the importance of setting up proctoral committees within educational institutions to prevent and address ragging.
- Furthermore, it highlighted the possibility of reporting ragging incidents to the police if they become unmanageable or amount to cognizable offenses.



### Raghavan Committee and UGC Guidelines:

- In 2009, the Supreme Court revisited the ragging issue and appointed a committee led by former CBI Director RK Raghavan to address it comprehensively.
- The committee's recommendations were later adopted by the University Grants Commission (UGC).
- The UGC issued detailed guidelines that universities were required to follow in order to counter ragging effectively.
- The UGC guidelines, titled "Regulations on Curbing the Menace of Ragging in Higher Educational Institutions," high-

lighted several forms of ragging, including teasing, causing physical or psychological harm, generating a sense of shame, and engaging in financial extortion.

### Legal Consequences of Ragging in India:

- While ragging itself is not categorized as a specific offense, it can be penalized under various provisions of the Indian Penal Code (IPC).
- For instance, wrongful restraint, as defined under Section 339 of the IPC, can lead to imprisonment for up to one month or a fine of up to five hundred rupees, or both.
- Wrongful confinement, governed by Section 340 of the IPC, can result in imprisonment for up to a year or a fine of up to one thousand rupees, or both.

### Toxic Femininity

- Toxic femininity emerged as a counterpart to toxic masculinity, which was first introduced in the 1980s by Shepherd Bliss during the mythopoetic men's movement.
- Toxic femininity emphasizes societal expectations that restrict women to submissive roles, fostering internalized misogyny.
- It is seen as a result of societal expectations around gender roles, forcing women into submissive positions that uphold male dominance.
- This internalized misogyny leads women to endure

aggression and sexist behavior as a means of survival.

- Another viewpoint sees toxic femininity as a strategy for women to gain influence within a patriarchal system.
- This might involve using manipulation or portraying oneself as a victim to gain control while appearing outwardly powerless.

### Ayushman Bharat-PradhanMantri Jan ArogyaYojana

- Recently, The Comptroller and Auditor-General of India's (CAG) performance audit report flagged irregularities in the Ayushman Bharat-PradhanMantri Jan ArogyaYojana (PMJAY).

### Issues Highlighted By CAG

- Treatment of Dead Patients:
- The patients earlier shown as "dead" continued to avail treatment under the scheme.

### Unrealistic Household Sizes:

- There are instances where the registered household sizes were unrealistically large, ranging from 11 to 201 members.
- Such discrepancies suggest a lack of proper validation controls during the beneficiary registration process.

### Pensioners Availing Benefits:

- Pensioners in certain states were found to possess PMJAY cards and were availing treatment under the scheme.



### Bogus Mobile Number and Aadhaar:

- It revealed that some beneficiaries were registered with a single bogus mobile number, potentially compromising the verification process.

### Systemic Failures:

- CAG's report unearthed systemic issues, including private hospitals performing public hospital-reserved procedures, infrastructural inadequacies, equipment shortages, and medical malpractice cases.

### Pending Penalties:

- The report flagged pending penalties of Rs 12.32 crore from 100 hospitals across nine states.

### Issue of data collection in the Scheme:

- It is possible that some random ten-digit number was entered by the field level workers in some cases.

## **CAG Report on National Social Assistance Programme**

- A recent report on the performance audit of the National Social Assistance Programme (NSAP) from 2017-18 to 2020-21" by the Comptroller and Auditor General of India (CAG) has revealed several irregularities and lapses in the planning,

financial management, implementation and monitoring of the welfare scheme NSAP.

### Key Highlights of the Report

- Misuse of Pension Funds for Publicity: The Ministry of Rural Development (MoRD) diverted funds allocated for NSAP, which are meant for disbursing pensions, towards publicity campaigns for other ministry schemes.

### Advertisement Discrepancies:

- The CAG found that the advertisement work orders did not include NSAP schemes but highlighted schemes like PradhanMantriAwaasYojana - Gramin (PMAY-G) and Deen-DayaUpadhyayaGrameen-KaushalyaYojana (DDU-GKY).

### States Implicated in Fund Diversion:

- Six states - Rajasthan, Chhattisgarh, Jammu & Kashmir, Odisha, Goa, and Bihar - were found to have diverted funds meant for pension schemes.

### Implications and Beneficiary Impact:

- Planned Information, Education, and Communication (IEC) activities under NSAP were adversely affected due to fund diversion.

### National Social Assistance Programme (NSAP)

- NSAP was launched on 15th August 1995 as a Centrally Sponsored Scheme.

- NSAP represents a significant step towards the fulfilment of the Directive Principles in Articles 41 and 42 of the Constitution of India.

- NSAP aims to provide support to aged persons, widows, disabled persons and bereaved families on the death of the primary income producer, belonging to below-poverty-line households.

### Organ Donation in India

- Recently, the critical shortage of organ donations, particularly deceased donations, has led to a dire situation in India, with thousands of patients waiting for transplants and a significant number losing their lives daily.

- The Ministry of Health and Family Welfare has earlier modified National Organ Transplantation Guidelines, allowing those above 65 years of age to receive an organ for transplantation from deceased donors.

- In India, the Transplantation of Human Organs Act, 1994 provides various regulations for the removal of human organs and their storage. It also regulates the transplantation of human organs for therapeutic

purposes and for the prevention of commercial dealings in human organs.

### Status of Organ Donation in India

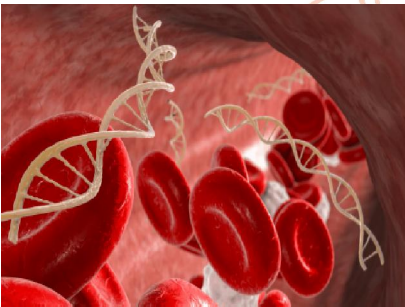
1. Growing Demand and Persistent Shortage
2. Slow Growth in Donor Numbers
3. Deceased Organ Donation Rate
4. Prevalence of Living Donors
5. Regional Disparities in the donation
6. Significant disparity between demand and supply in Kidney transplantation in

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## XI. Science & Technology

### Cell-Free DNA

- A notable advancement in medical science has emerged in recent years through the discovery of cell-free Deoxyribonucleic Acid (cfDNA), carrying significant implications for disease detection, diagnosis, and treatment.
- cfDNA stands poised to reshape the entire landscape of medical science.



### Cell-Free DNA (cfDNA)

- cfDNA refers to fragments of DNA that exist outside of cells, specifically in various body fluids. Unlike the majority of DNA which is enclosed within cells.
- Scientists have been aware of cfDNA since 1948, but only in the last two decades have they figured out what to do with it.
- cfDNA is released into the ex-

tracellular environment under different circumstances, including cell death or other cellular processes.

- These cfDNA fragments contain genetic information and can offer insights into a person's health status, potential diseases, and genetic variations.

### Applications:

- Cell-free DNA serves as a valuable tool for screening chromosomal abnormalities in developing fetuses, such as Down syndrome.
- Identifying cancers at their initial stages for prompt treatment.
- Combining cfDNA analysis with existing methods enhances overall cancer detection.
- Investigating cfDNA's potential as a biomarker for neurological disorders.
- Aiding in the diagnosis and monitoring of conditions like Alzheimer's disease, neuronal tumours, and stroke.

### Advancing Disease Research:

- Researchers use cfDNA analysis

to study disease mechanisms, monitor treatment effectiveness, and gain insights into disease pathways.

- The versatility of cfDNA applications contributes to a deeper understanding of complex diseases and their underlying genetic factors.

### WHO Report on Tobacco Control

- The World Health Organisation (WHO) recently released a comprehensive report on tobacco control measures. The report evaluates the progress made globally since the introduction of the MPOWER measures - a set of strategies developed by WHO to combat tobacco use and its detrimental effects on health.

### MPOWER Measures

- In 2008, the WHO established MPOWER, a plan consisting of the six most important and effective tobacco control methods. The six MPOWER strategies include:
  - M: Monitor tobacco use and prevention policies

- P: Protect people from tobacco smoke
- O: Offer help to quit smoking
- W: Warn about the dangers of tobacco
- E: Enforce bans on tobacco advertising, promotion and sponsorship
- R: Raise taxes on tobacco

### Major Highlights of the Report

- Global Tobacco Control Progress:
  - Worldwide, there has been a decline in smoking prevalence from 22.8% in 2007 to 17% in 2021, resulting in 300 million fewer smokers today.
- Addressing the Challenges:
  - At least 44 countries still do not implement any MPOWER measure, and 53 countries do not have a complete ban on smoking in healthcare facilities.
  - Additionally, only half of the countries enforce smoke-free workplaces and restaurants.
  - WHO emphasizes the dangers of e-cigarettes, noting that the tobacco industry's aggressive promotion of e-cigarettes as a safer alternative undermines progress.
- E-cigarettes pose risks to both users and those around them, especially in indoor environments.
- Second-hand Smoking:
  - Of the estimated 8.7

million tobacco-related deaths annually, 1.3 million are non-smokers exposed to second-hand smoke.

- Second-hand smoke is linked to almost 400,000 deaths due to heart disease. Moreover, second-hand smoke adversely affects children, leading to severe asthma, respiratory tract infections, and sudden infant death syndrome.
- Around 51,000 deaths in children and adolescents under 20 years are attributed to exposure to second-hand smoke.

### India's Progress in Tobacco Control:

- India excels in implementing health warning labels on tobacco products and providing tobacco dependence treatment.
- About 85% of cigarette packs in India carry health warnings on both the front and back, placing the country among the top 10 in terms of warning label size.
- India has also banned the sale of e-cigarettes and implemented smoking bans in healthcare facilities and educational institutions.
- The city's efforts have led to a commendable 27% reduction in smoking in public places.

### Related Government Initiatives:

- Cigarettes and other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Amendment Rules, 2023.

### National Tobacco Quitline Services (NTQLS)

- The Union Finance Minister of India announced a 16% increase in National Calamity Contingent Duty (NCCD) on cigarettes in the Budget 2023-24.
- The Union Health Ministry of India has announced new regulations requiring Over-The-Top (OTT) platforms to display tobacco-related health warnings during streamed content.

### Finger Minutiae Record - Finger Image Record (FMR-FIR) Modality

- Recently, the Unique Identification Authority of India (UIDAI) has rolled out an in-house Artificial Intelligence/Machine Learning (AI/ML) technology-based Finger Minutiae Record – Finger Image Record (FMR-FIR) modality.
- This technology, specifically designed to enhance Aadhaar-enabled Payment System (AePS) transactions, aims to tackle fraudulent activities, including the misuse of cloned fingerprints.
- Finger Minutiae Record - Finger Image Record (FMR-FIR) Modality
- The FMR-FIR modality is an advanced AI/ML-based technology developed by the UIDAI to bolster security measures within the Aadhaar-enabled Payment System (AePS).



### Key Features and Functionality:

- FMR-FIR combines the analysis of two distinct components – finger minutiae and finger image – to establish the authenticity of fingerprint biometrics during Aadhaar authentication.
- The modality's primary function lies in assessing the liveness of the captured fingerprint.
- It can differentiate between a genuine, "live" finger and a cloned or fake fingerprint, thereby preventing spoofing attempts.
- FMR-FIR operates in real-time, providing instant verification results during the authentication process.
- By detecting and deterring the use of cloned fingerprints, the technology significantly reduces the risk of AePS frauds.
- The emergence of fraudulent activities involving cloned fingerprints necessitated the development of a sophisticated solution to safeguard AePS transactions.
- The figures dramatically escalated to nearly 20 million in FY23, according to data from supervised entities of the Reserve Bank of India (RBI).
- While many cases go unreported due to limited awareness about cyber frauds, instances of financial frauds remain significant.
- Instances of unauthorized money transfers through fake fingerprints created using silicone prompted the need for a more

secure and technologically advanced approach.

- The integration of artificial intelligence and machine learning technologies enhances the accuracy and effectiveness of fingerprint authentication.

### Advantages and Implications:

- UIDAI's FMR-FIR technology bolsters security, mitigates vulnerabilities, boosts transaction confidence, and exemplifies technological innovation for societal welfare.

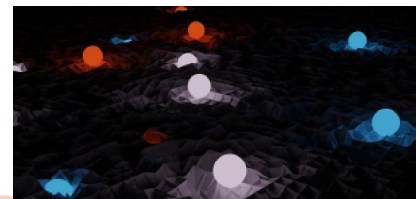
### **African Gene Variant CHD1L: Shield Against HIV Progression**

- A recent study published in the journal Nature reveals that certain individuals of African descent carry a unique gene variant, Chromodomain Helicase DNA Binding Protein 1 Like (CHD1L), that plays a pivotal role in moderating the progression of human immunodeficiency virus (HIV).
- This variant of the CHD1L gene is exclusively found in the African population and has been linked to reduced viral loads of the most virulent strain of HIV, HIV-1.
- The gene's function involves coding for proteins that facilitate DNA damage repair.
- Consequently, their potential to transmit the virus is diminished, and the advancement of their own illness is decelerated.
- While 4% to 13% of individuals of African origin might carry this

gene variant, the mechanisms by which it influences viral load are not yet fully understood.

### **Somatic Genetic Variants**

- Recent advances in genome sequencing unveil the impact of somatic genetic variants on human health, from cancer development to immune disorders, driving innovation in disease detection and treatment strategies.



- Somatic genetic variants also known as somatic mutations refer to alterations in the DNA sequence that occur specifically within the cells of an individual's body (somatic cells), excluding the germline cells (sperm and egg cells).
- Somatic genetic mutations occur after birth during development and are not inherited from parents.

### Influence of Somatic Genetic Variants on Human Health:

- Somatic genetic variants can drive the uncontrolled cell growth and division characteristic of cancer, leading to tumor formation.
- Accumulated somatic mutations in brain cells can contribute to neurological conditions, affecting cognitive and motor functions.
- Gradual accumulation of

somatic mutations with age can impair tissue function and contribute to age-related diseases.

- Somatic variants can disrupt immune cell development and function, leading to autoimmune disorders and immunodeficiencies.

### Harnessing Somatic Genetic Variants for Human Health Advancement:

- **Disease Biomarkers:** Somatic variants can serve as diagnostic and prognostic markers for diseases.
- Detecting specific mutations can aid in early disease detection and predicting disease progression.
- **Precision Medicine:** Knowledge of an individual's somatic mutations allows personalized treatment plans.
- Tailoring therapies to a patient's unique genetic makeup can enhance treatment outcomes.
- **Aging and Longevity:** Studying somatic mutations associated with aging can shed light on the aging process and age-related diseases, potentially leading to interventions for healthier aging.
- **Solution of Genetic Disease:** In some instances, somatic mutation brings a deleterious change to a normal one, a phenomenon known as revertant mosaicism.
- E.g., Around 10% of cases of Wiskott-Aldrich syndrome, a

rare genetic immunodeficiency, have been found to have revertant mosaicism, as a result alleviating the severity of the disease in many individuals.

### Exploring Consciousness in Artificial Intelligence

- Researchers have developed a checklist based on neuroscience-based theories that could help assess whether an Artificial Intelligence (AI) system is conscious.
- The study suggests that the rapid progress in the field of AI has raised the possibility that conscious AI systems could be built in the near future.
- However, human-like behaviors can make it difficult to judge the true level of engagement by AI systems.
- Being conscious means experiencing consciousness or having the potential for it.
- "Conscious" is different from "sentient" which refers to having senses.
- No AI system appears to be a strong candidate for consciousness at present.
- Microsoft's study: GPT-4 AI can think and use common sense like humans.
- Researchers believe assessing AI consciousness is scientifically doable, and the authors provided initial evidence that many of the indicator properties can be implemented in AI systems using current techniques.

### Scientific Authenticity of Nano Liquid Urea

- Recently, an opinion paper published in the journal "Plant and Soil" has raised concerns about the scientific validity of Nano Liquid Urea produced by the Indian Farmers and Fertiliser Cooperative (IFFCO).



- The paper questions the claims made about the efficacy and benefits of the product, emphasizing the need for rigorous scientific scrutiny before launching nano fertilizers into the market.

### Liquid Nano Urea

- It is urea in the form of a nanoparticle. It is a nutrient (liquid) to provide nitrogen to plants as an alternative to the conventional urea.
- Urea is a chemical nitrogen fertilizer, white in colour, which artificially provides nitrogen, a major nutrient required by plants.
- It is developed to replace conventional urea and it can curtail the requirement of the same by at least 50%.
- It contains 40,000 mg/L of nitrogen in a 500 ml bottle which is equivalent to the impact of nitrogen nutrient provided by one bag of conventional urea.

- It has been indigenously developed at Nano Biotechnology Research Centre, Kalol, Gujrat in line with Atmanirbhar Bharat and AtmanirbharKrishi.
- India is dependent on imports to meet its urea requirements.
- Liquid Nano Urea has been found effective and efficient for plant nutrition which increases production with improved nutritional quality.
- It can boost a balanced nutrition program by reducing the excess use of Urea application in the soil and make the crops stronger, healthier and protect them from the lodging effect.
- It has a positive impact on the quality of underground water, a very significant reduction in global warming with an impact on climate change and sustainable development.

### **Meta's New AI model can Translate & Transcribe Nearly 100 Languages**

- Meta has developed an AI model known as SeamlessM4T, capable of translating and transcribing in over 100 languages, both in text and speech. It's the pioneering all-in-one multilingual and multimodal AI tool for translation and transcription.
- Meta's goal is to elevate interconnectedness by granting users access to a broader array of multilingual content.
- It also supports speech-to-

speech translation in around 100 input languages and around 35 output languages, including English.

- This unified approach of SeamlessM4T minimizes errors and delays, enhancing the efficiency and quality of translation processes.
- Meta's text-to-text machine translation model, known as No Language Left Behind (NLLB), supports approximately 200 languages. Notably, NLLB has been integrated into Wikipedia as one of its translation providers.

### **Hubble Space Telescope Captures Image of Irregular Galaxy**

- The Hubble Space Telescope has captured an image of the irregular galaxy ESO 300-16 located at a distance of 28.7 million lightyears in the southern constellation of Eridanus.
- Irregular galaxies do not have a clearly defined shape, and appear as diffuse clouds. A bubble of bright, blue gas is visible towards the galaxy core
- ESO 300-16 was captured as part of an imaging campaign known as Every Known Nearby Galaxy, which aims to create a complete inventory of Hubble images of all galaxies within 10 megaparsecs of the Earth, or 32.6 million lightyears.
- Even the distance that light travels in a year is not convenient for measuring astronomi-

cal distances, which is why astronomers use parsecs.

- One parsec is equal to 3.26 lightyears, or 30.9 trillion kilometers. A megaparsec is one million parsecs.
- The Every Known Nearby Galaxy campaign aims to capture the remaining 25% of the galaxies. Hubble has previously captured the lenticular galaxy NGC 6684 and the irregular dwarf galaxy NGC 1156 as part of the campaign.

### **Demon Particle**

- Recently, a team of researchers from the University of Illinois discovered a unique particle, known as a "demon particle," within a metal called strontium ruthenate. This discovery has the potential to pave the way for the development of superconductors capable of operating at room temperature.

### **Demon Particle**

- The demon particle is a name given to a type of quasiparticle, which is not a real particle, but rather a collective excitation or vibration of many electrons in a solid.
- Quasiparticles are useful for describing the complex behavior of electrons in solids, such as metals and semiconductors.
- He believed that electrons would behave strangely when passed through a solid. Electric interactions make electrons combine to form collective units. This can make them lose individuality in solids.



- However, with such a large mass, plasmons (collective oscillation of conduction electrons in metals) cannot form with energies available at room temperature.
- However, demons do not contain mass, they can form with any energy and at room temperature as well.



- The demon particle could have many applications in computing, medical imaging, transportation, and energy.
- Examples: Aluminium, niobium, magnesium diboride, etc.

### Gene Editing in Mustard Breeding

- Indian scientists have developed the first ever low-pungent mustard that is pest and disease-resistant. It is based on CRISPR/Cas9 gene editing, while being non-GM and transgene-free.

#### Background:

- Traditional mustard seeds (*Brassica juncea*) that are grown in India contain about 120-130 parts per million (ppm) of compounds called glucosinolates, which are a group of sulphur and nitrogen-containing compounds contributing to the characteristic pungency of their oil and meal.

- These compounds serve as natural defenders, protecting the plant from pests and diseases.
- Oilseeds yield oil for cooking, and their leftover meal, a protein-rich ingredient, is used in animal feed. Rapeseed meal, rich in glucosinolates, is fed to livestock but requires mixing with grass and water.
- High glucosinolates are also known to cause goiter (swelling of neck) and internal organ abnormalities in livestock.
- Scientists have been working on a goal to develop mustard seeds that have fewer glucosinolates, similar to canola seeds.
- However, reducing glucosinolates in mustard seeds can weaken the plant's overall ability to defend itself against pests and diseases, which presents a challenge.

#### Status of Mustard Cultivation in India

- Mustard is India's most widely-cultivated oilseed crops, planted annually on 9 million hectares area respectively. It is grown in Rabi season.
- Its higher average oil extractable content (38%) makes mustard a good "oilseed" crop, while a source of both fat for humans and protein for animals.
- Mustard is an important cash crop for farmers in Rajasthan, Haryana, Madhya Pradesh and Uttar Pradesh, among others.

### Challenges in Lunar Landing Missions

- Recently, Russia's Luna-25 crashed on the Moon's surface, ending its first mission to the lunar surface 47 years after the last landing by the former Soviet Union.
- This leaves India's Chandrayaan-3 on course to become the first spacecraft to land near the Lunar South Pole.
- Russia's Luna-25 marked the resumption of lunar interest and plans to continue the Luna series.

#### Luna-25 Mission

- The Luna 25 mission, originally named Luna-Glob, underwent over two decades of development before joining the historic Luna series initiated in 1976.
- The mission aimed to secure Russia's access to the Moon's surface amid its significance in space exploration and geopolitical rivalry.
- While Russia and China lead the International Lunar Research Station (ILRS), the U.S. heads the Artemis Accords.

#### Failure:

- The Luna 25 spacecraft encountered a technical glitch, surpassing its operational limits.
- The failure appears linked to an attempt to shift its circular orbit to a lower pre-landing orbit.
- Excessive thrust during this maneuver caused a trajectory deviation, causing the craft to crash onto the Moon's surface.

## Agnibaan SubOrbital Technological Demonstrator (SOrTeD)

- Recently, AgniKul Cosmos, a space tech start-up based in Chennai, set to launch their groundbreaking Agnibaan Sub-Orbital Technological Demonstrator (SOrTeD), the world's first 3D-printed rocket into space.
- AgniKul Cosmos' journey is supported by the Indian Space Research Organisation (ISRO) and Indian National Space Promotion and Authorisation Centre (IN-SPACe).

### Key Highlights of AgniKul's SOrTeD

- The AgnibaanSOrTeD is a customisable launch vehicle that could be launched in one or two stages. It is powered by AgniKul's patented Agnilet engine.
- Agnilet, is a 3D-printed, 6 kilonewton (kN) semi-cryogenic engine that uses liquid oxygen and kerosene as propellants.
- Unlike traditional sounding rockets that launch from guide rails, AgnibaanSOrTeD will take off vertically and follow a predetermined trajectory, executing precisely orchestrated maneuvers during its flight.
- It is capable of carrying payloads up to 100 kg to an altitude of 700 km in five different configurations.
- AgnibaanSOrTeD will be the first step towards launching the

world's first 3D-printed rocket into space.

### 3D Printing

- 3D printing is also known as additive manufacturing which uses materials such as plastics and metals to convert products envisaged on computer-aided design to real three-dimensional items.

## Amyotrophic Lateral Sclerosis

- Amyotrophic Lateral Sclerosis (ALS), a debilitating Neurodegenerative Disease, presents a range of challenges for both patients and caregivers in India.
- Despite its rare occurrence, ALS profoundly impacts the lives of those affected due to its progressive nature and lack of effective treatment.

### Amyotrophic Lateral Sclerosis (ALS)

- ALS is a rare and fatal type of motor neuron disease. It is characterized by progressive degeneration of nerve cells in the spinal cord and brain.
- It's often called Lou Gehrig's disease, after a famous baseball player who died from the disease.
- ALS is one of the most devastating of the disorders that affects the function of nerves and muscles.
- As motor neurons degenerate and die, they stop sending messages to the muscles, which

causes the muscles to weaken, start to twitch (fasciculations), and waste away (atrophy).

- Eventually, the brain loses its ability to initiate and control Voluntary Movements.
- The movements that are under our control are called voluntary actions, such as walking, running, sitting etc.
- On the other hand, the movements that are not under our control are called involuntary movements.

### Causes:

- Causes are not yet, in a few cases, genetics is involved.
- ALS research is looking into possible environmental causes of ALS.

### Symptoms:

- With ALS, there may be weakness in a limb that develops over a matter of days or, more commonly, a few weeks. Then, several weeks to months later, weakness develops in another limb. Sometimes the initial problem can be one of slurred speech or trouble swallowing.

### Treatment:

- There is no cure and proven treatment for ALS.

### Initiatives to Tackle ALS

- The Government's National Policy for Rare Diseases (NPRD), 2021, introduced a significant provision offering financial aid of up to Rs. 50 lakh to patients afflicted by Rare Diseases and receiving treatment at desig-

nated Centers of Excellence.

- The World Health Organisation (WHO) characterizes rare diseases as debilitating conditions with a prevalence of 1 or less per 1000 population.
- This policy initiative aims to support individuals, including those with conditions like ALS, by providing substantial financial assistance for their treatment.

### **Nanomechanical Testing Technology**

- An Indian scientist, Dr. Sudharshan Phani has developed a novel method for precise nanomechanical testing of materials at extremely small scales.
- The new technique enhances the precision and accuracy of nanoindentation testing, allowing for high throughput testing at higher rates.
- Nanoindentation has widespread applications, including measuring semiconductor device strength and understanding material properties in various fields such as cancer

### **Cell research and Meteorite formation.**

- The approach involved extensive modeling and simulation to understand material responses during indentation tests, leading to tailored improvements in precision and accuracy.
- The new methodology sets the stage for high precision and high accuracy nanoindentation

measurements at faster rates, impacting diverse scientific research areas related to material strength measurement.

### **Chandrayaan-3 Moon Lander Separates from Propulsion Module**

- After 34 days on board the Chandrayaan-3 spacecraft, the propulsion module and the lander module parted ways on 17th August, and have now embarked on their respective journeys.
- ISRO's Chandrayaan-3 mission involves a lander module (LM), a propulsion module (PM), and a rover for lunar exploration.
- LM and PM were successfully separated, with the LM set to descend to a lower orbit through planned deboosting.
- The propulsion module's main role is to transport the lander from launch vehicle injection to a 100-km orbit around the moon.
- The lander's primary function is soft landing and deploying the rover for in-situ chemical analysis of the lunar surface.

### **National Automated Fingerprint Identification System (NAFIS)**

- National Automated Fingerprint Identification System (NAFIS) of National Crime Records Bureau (NCRB), won the Gold Award under the Excellence in Government Process Reengineering for Digital Transformation Category-1 of Department of

Administrative Reforms and Public Grievances (DARPG).

- NAFIS, a nationwide database managed by NCRB, swiftly stores crime-related fingerprints and assigns a unique 10-digit National Fingerprint Number (NFN) to apprehended criminals within 24 hours.



- NFN remains with the offender for life, connecting various crimes under different FIRs to the same ID.
- ID comprises state code (first two digits) and sequential number, specific to states.
- NAFIS swiftly identifies persons of interest, linking their names to warrants, warnings, and related criminal data in police reference systems.
- Operates from New Delhi's Central Fingerprint Bureau (CFPB).
- NAFIS aims to collect fingerprint data of criminals from all Indian states and Union Territories, offering a web-based platform for real-time uploading, tracking, and retrieval of information by law enforcement agencies.



## FloodWatch Real-Time Flood Monitoring App

- Recently, the Central Water Commission (CWC) under the Ministry of Jal Shakti, launched the mobile application "Flood-Watch" for disseminating flood-related information in real-time.

### Key Features of FloodWatch:

- Real-time flood monitoring provides up-to-date flood situations across the country.



- App utilizes near real-time river flow data from various sources to enhance accuracy.
- Interactive Map feature enables users to check CWC Flood Forecast (24 hours) or Flood Advisory (7 days) by selecting stations directly from the map or using the search box.
- "FloodWatch" incorporates advanced technologies like satellite data analysis, mathematical modelling, and real-time monitoring to ensure accurate flood forecasts.

## Curbing Fraud with SIM Card Registration

- The Department of Telecommunications (DoT) in India has introduced new measures to combat cyber fraud and scam calls related to SIM cards, these include mandatory registration

and verification of SIM dealers, with the goal of curbing fraudulent activities and strengthening mobile security.

- Recent efforts have led to the blacklisting of 67,000 SIM dealers and 52 lakh connections, with over 300 First Information Reports (FIR) registered.
- The rollout of the Sanchar Saathiportal(SSP) complements these efforts, solidifying India's commitment to combatting telecommunications-related fraud.
- The SSP, developed by the Centre for Development of Telematics (C-DOT) under the DoT, addresses prevalent telecom frauds like identity theft and banking fraud.
- Over 40 lakh fraudulent connections were identified, and 36 lakhs disconnected using the portal.
- Protects against identity theft, forged KYC, mobile device theft, and banking fraud.

## India and WHO to launch Global Initiative on Digital Health

- India and the World Health Organization (WHO) will introduce the Global Initiative on Digital Health during the ongoing G-20 summit in Gandhinagar, Gujarat.
- This global initiative focuses on bringing together health data, connecting health platforms, and investing in digital health worldwide.

- The summit is also aiming to establish a vital interim Medical Countermeasure (MCM). This involves a 'network of networks approach' to be prepared for future health emergencies.
- The worldwide digital platform will have three main parts:
  - An investment tracker.
  - An ask tracker (to find out what products and services are needed by different people).
  - A collection of existing digital health platforms.
  - Digital health innovations and solutions will aid universal health convergence and improve healthcare service delivery.

## Removing Animals from Drug-Testing Process

- The Government of India has recently introduced an amendment to the New Drugs and Clinical Trial Rules, 2023. The amendment addresses the ethical and scientific concerns surrounding the use of animals in research, particularly in drug testing.
- This step authorizes researchers to utilize innovative non-animal and human-relevant methods for testing new drugs, ushering in an era of more accurate, efficient, and ethically aligned drug development processes.

## Current Drug-Development Landscape

- The journey of every drug from conception to market involves

a series of rigorous tests to assess its efficacy and potential side effects. Traditionally, this process has involved testing candidate molecules on animals, typically rodents like mice or rats, as well as non-rodents such as canines and primates. However, this approach has significant limitations:

- **Species Mismatch:** Humans exhibit intricate biological variations due to factors such as age, genetics, diet, and pre-existing diseases.
- Animal models, even non-rodents, cannot fully replicate the complex human response to drugs.
- **High Failure Rates:** The considerable divergence between animal and human responses contributes to the high failure rate of drug development.
- Despite advancements in the pharmaceutical sector, most drugs that pass animal testing fail during human clinical trials.
- Recognizing these limitations, researchers globally have been exploring alternative testing methods that better replicate human biology and responses.

### Key Emerging Alternative Testing Methods

- **Organoids:** Organoids are three-dimensional cellular structures that emulate specific organs of the body.
- These miniature organs, developed from human cells or stem cells, provide a more accurate representation of human physi-

ology, enabling researchers to study drug interactions in a human context.

- **Organs-on-Chip:** Organs-on-chip are small devices lined with human cells, mimicking the blood flow and cellular interactions within the body.
- These chips replicate key physiological aspects and allow researchers to analyze tissue-tissue interactions and chemical signals, providing a platform for more accurate drug testing.
- **3D Bioprinting:** 3D bioprinting technology enables the creation of complex human tissues and organs using patient-specific cells.
- This advancement allows for the development of personalized drug testing approaches, catering to individual variations in biology.



### Global Regulatory Shift to Accommodate Emerging Methods

- The European Union passed a resolution in 2021 to transition towards non-animal testing methods.
- The U.S. introduced the FDA Modernization Act 2.0 in 2022,

allowing the use of human-relevant systems for drug testing.

- South Korea and Canada also introduced legislation to promote alternatives to animal testing.
- In March 2023, India joined this global shift by amending the New Drugs and Clinical Trial Rules 2019, enabling the incorporation of human-based testing methods into the drug development pipeline.

### Challenges and Opportunities Related to Regulatory Shift for India

- **Multidisciplinary Expertise:** Developing and implementing technologies like organoids and organs-on-chip demand diverse expertise, ranging from cell biology and materials science to electronics and pharmacology.
- India must invest in multidisciplinary training and resource-building to bridge existing knowledge gaps.
- **Resource Localization:** The current reliance on imported reagents, cell-culture materials, and instruments poses a resource challenge.
- To establish a self-sufficient ecosystem, India should focus on developing a robust infrastructure in areas like cell culture, material science, and electronics.
- **Standardization and Guidelines:** Variability in laboratory protocols can lead to inconsistent data.
- Clear guidelines and quality

criteria are essential to ensure reliable and comparable results across different labs.

- Regulatory bodies must adapt to the advancements in cell-based and gene-editing-based therapeutics.

### Lymphatic Filariasis

- Recently, the Union Health Minister inaugurated the second phase of the Annual Nationwide Mass Drug Administration (MDA) initiative for Lymphatic Filariasis.
- India aims to eliminate Lymphatic Filariasis by 2027, three years ahead of the global target, through a mission-driven strategy.

### Lymphatic Filariasis

- Lymphatic filariasis, commonly known as elephantiasis, is a neglected tropical disease caused by parasitic infection which is transmitted through the bite of

infected mosquitoes.

- This impacts millions of individuals in tropical and subtropical regions across the globe.

### Causes and Transmission:

- Lymphatic filariasis is caused by infection with parasites classified as nematodes (roundworms) of the family Filarioidae.
- There are 3 types of these thread-like filarial worms:
  - *Wuchereria bancrofti*, which is responsible for 90% of the cases,
  - *Brugia malayi*, which causes most of the remainder of the cases,
  - *Brugia timori*, which also causes the disease.

### Symptoms:

- Lymphatic filariasis infection involves asymptomatic, acute, and chronic conditions.

- In chronic conditions, it leads to lymphoedema (tissue swelling) or elephantiasis (skin/tissue thickening) of limbs and hydrocele (scrotal swelling).

### Treatment:

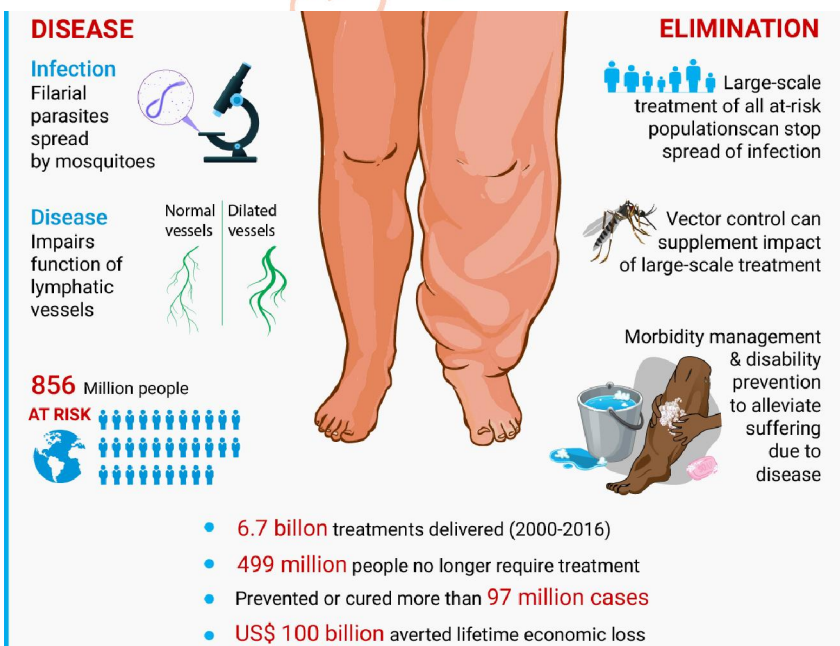
- The World Health Organization (WHO) recommends three drug treatments to accelerate the global elimination of lymphatic filariasis. The treatment, known as IDA, involves a combination of ivermectin, diethylcarbamazine citrate and albendazole.
- The plan is to administer these drugs for two consecutive years. The life of the adult worm is hardly four years, so it would die a natural death without causing any harm to the person.

### Global Threat and Preventive Measures:

- Over 882 million people in 44 countries face the threat of lymphatic filariasis and require preventive chemotherapy.
- Preventive measures involve mass drug administration (MDA) to the at-risk population using safe medicine combinations.
- More than 9 billion treatments have been administered since 2000 to halt infection spread.

### Progress and Achievements:

- Successful MDA efforts have reduced transmission and infection prevalence.
- 740 million people no longer require preventive chemotherapy.





- In 2018, 51 million people were infected, marking a 74% reduction since the initiation of global elimination efforts.

### Vector Control and WHO's Approach:

- Mosquito control, such as insecticide-treated nets and indoor residual spraying, supplements preventive chemotherapy.
- WHO's Global Programme to Eliminate Lymphatic Filariasis (GPELF) launched in 2000 with a mission to eradicate the disease.
- GPELF aims to validate elimination in 80% of endemic countries by achieving sustained low infection rates and providing care.
- The program strives for post-MDA surveillance in all endemic countries and ultimately reduces the population needing MDA to zero.
- The strategy focuses on stopping infection spread and providing essential care to affected individuals.

### India's Initiatives for Lymphatic Filariasis Eradication

- Nationwide Mass Drug Administration campaigns administer preventive medicines in endemic areas.
- Collaboration with various stakeholders, sectors, and NGOs enhances the initiative's impact.
- "Through Jan Bhagidaari and 'Whole of Government' and 'Whole of Society' approach,

India shall be able to eliminate this disease from the country".

- Second phase of the MDA initiative targets 81 districts in 9 endemic states for targeted intervention. (Assam, Bihar, Chhattisgarh, Jharkhand, Karnataka, Maharashtra, Odisha, Telangana and Uttar Pradesh).
- State-central collaborations enhance healthcare, surveillance, prevention, and treatment.
- Encouraging medication consumption in the presence of healthcare workers promotes adherence.

### Indian Web Browser Development Challenge

- Recently, the Ministry of Electronics & Information Technology (MeitY) has launched the Indian Web Browser Development Challenge (IWBCD), inviting developers to create an Indigenous Indian Web Browser for global use.
- A key requirement of this competition is that the browser ideas must trust the Controller of Certifying Authorities (CCA), the Indian government's authority responsible for digital signatures, including SSL (Secure Sockets Layer) certificates.

### What is a Web Browser?

- The web browser is an application software to explore www (World Wide Web). It provides an interface between the server and the client and requests to the server for web documents and services.

- It works as a compiler to render HTML which is used to design a webpage.
- Whenever we search for anything on the internet, the browser loads a web page written in HTML, including text, links, images, and other items such as stylesheet and JavaScript functions.
- Google Chrome, Microsoft Edge, Mozilla Firefox, and Safari are examples of web browsers.

### What is the Indian Web Browser Development Challenge?

- About:
  - The IWBCD is an Open Challenge Competition that seeks to inspire and empower technology enthusiasts, innovators, and developers from all corners of the country to create an indigenous web browser.
  - It will have its own trust store with an inbuilt Controller of Certifying Authorities (CCA) India root certificate, cutting edge functionalities and enhanced security & data privacy protection features.
  - IWBCD is spearheaded by MeitY, CCA and C-DAC Bangalore.
  - The competition is being organised and financed in collaboration with the IT Ministry's Research and Development division and the National Internet Exchange of India.

- Objective:
  - Proposed browser will focus on accessibility and user friendliness, ensuring built-in support for individuals with diverse abilities.
  - Moreover, the browser envisions the ability to digitally sign documents using a crypto token, bolstering secure transactions and digital interactions.
- Significance:
  - The challenge marks a significant stride towards an Aatmanirbhar Bharat, designed to strengthen India's digital sovereignty through the development of the Indian Web Browser.
  - This challenge addresses one of the critical components – Web browser – through which the end users accessing the Internet.

### What are Secure Sockets Layer (SSL) Certificates?

- About:
  - An SSL certificate is a digital certificate that authenticates a website's identity and enables an encrypted connection.
  - It is a security protocol that creates an encrypted link between a web server and a web browser.
  - Companies and organizations need to add SSL certificates to their websites to secure online transactions and keep customer information private and secure.

### Role of Root certifying Authorities in Trust:

- While India has a legally valid root certifying authority called the Root Certifying Authority of India, established in 2000 under the CCA, the certificates issued by it are not widely recognized by popular web browsers.
- The CCA has established the RCAI under section 18(b) of the IT Act to digitally sign the public keys of CAs in the country.
- The RCAI is operated as per the standards laid down under the Act.
- This reliance on foreign authorities has raised concerns over digital security and foreign exchange outflow.

### Issues with Indian SSL System:

- India lacks a root certifying authority that is trusted by major browsers like Google Chrome, Mozilla Firefox, and Microsoft Edge.
- This has led to Indian government and private websites obtaining SSL certificates from foreign certifying authorities.
- A notable incident involving the National Informatics Centre (NIC), a CCA-approved organization responsible for hosting and maintaining various Union and State Government websites, underscored trust issues in Indian certifying authorities.
- In 2014, browsers and operating systems stopped trusting

India's CCA after the NIC was linked to issuing fraudulent certificates.

- While NIC's authorization for SSL certificate issuance was revoked, the trust in Indian certifying authorities remained compromised.

### New Spaceport in Tamil Nadu to Boost India's Space Sector

- India is set to expand its space capabilities with the establishment of a new spaceport in Kurlasekarapattinam, Tamil Nadu.
- The spaceport will be used for launching the Small Satellite Launch Vehicles (SSLV) developed by the Indian Space Research Organisation (ISRO), which are designed to offer low-cost and flexible access to space for small satellites.
- The spaceport will also be open for use by Non-Government Entities (NGEs), subject to technical and safety requirements, as per the Indian Space Policy 2023.
- The Government has also established the Indian National Space Promotion and Authorization Centre (IN-SPACE) as a single-window agency for facilitating and authorizing the space activities of NGEs.

### Nuclear Rocket for Space Travel

- NASA in collaboration with the United States Defense Advanced Research Projects Agency (DARPA) is seeking a

nuclear propulsion system that could potentially cut down the travel time to Mars by half.

- This ambitious initiative, known as the Demonstration Rocket for Agile Cislunar Operations (DRACO) and the launch is scheduled for late 2025 or early 2026.

### DRACO

- The DRACO project is offering the prospect of shorter travel times between celestial bodies and improved fuel efficiency. Central to DRACO's vision is a nuclear reactor that utilizes the energy derived from the fission of uranium atoms.
- Significance: DRACO hold the potential to revolutionize space travel in numerous ways:
- Acceleration and Speed: Unlike traditional rocket engines that rely on chemical reactions (fuel like hydrogen or methane with oxygen), nuclear reactions generate far more energy, enabling the spacecraft to accelerate continuously throughout its journey.
- This acceleration could significantly shorten travel times to distant destinations like Mars.
- Enhanced Fuel Efficiency: Nuclear propulsion systems yield greater fuel efficiency, reducing the need to carry excessive propellant.
- This advantage can drastically lower the duration of interplanetary voyages.

### Historical Context of Nuclear Propulsion and How DRACO is Different

- Projects like Orion, Rover, and NERVA explored nuclear-powered propulsion systems, although these initiatives were not fully realized.
- Notably, Project Orion considered using atomic bomb explosions for acceleration, while Project NERVA aimed to develop nuclear-thermal engines akin to the DRACO engine.

### DRACO marks a significant evolution from its predecessors due to several key differentiators:

- Fuel Enrichment: Unlike Project NERVA, which used weapons-grade uranium, DRACO employs a less-enriched form of uranium.
- This shift enhances safety and minimizes the risks associated with the use of radioactive materials.
- In-Space Activation: The nuclear reactor within the DRACO engine remains dormant until it reaches space.
- This precautionary measure mitigates the potential for radioactive accidents during launch or on Earth.

### Major Surface Features:

- **Olympus Mons:** The largest known volcano in the solar system.
- **Valles Marineris:** A massive canyon system.

- **Polar Ice Caps:** Ice caps made of water and frozen carbon dioxide (dry ice) at the poles.
- **Dusty Surface:** The surface is covered in fine dust and rocks.
- **Liquid Water:** Liquid water is rare, but evidence suggests past liquid flows.

### Conjunctivitis

- Conjunctivitis cases have been surging in India during the monsoon season, as the high humidity and rainfall create a favorable environment for the transmission of the infection.
- Also known as "pink eye," conjunctivitis is an eye condition characterized by inflammation of the conjunctiva, the thin membrane that covers the white part of the eye and lines the inner eyelids.
- It leads to redness, itching, discharge and pain in the affected eye.
- It can be caused by viruses, bacteria, allergens or other factors.
- Viral and bacterial conjunctivitis can spread through direct contact with contaminated hands or surfaces.
- Allergic conjunctivitis is not contagious and results from exposure to allergens.
- To prevent conjunctivitis, one should wash hands frequently, avoid touching or rubbing eyes, not share personal items with others, wear sunglasses or protective eyewear, and stay



away from people who have conjunctivitis.

### **India's Defence Ministry Adopts 'Maya' OS for Enhanced Cybersecurity**

- India's Defence Ministry has decided to replace the Microsoft Operating System (OS) on internet-connected computers with a new OS called Maya, developed locally based on open-source Ubuntu.
- The transition to Maya is aimed at bolstering security without disrupting user experience, as it offers an interface and functionality similar to Windows.
- This move comes in response to the escalating incidents of cyberattacks.
- Alongside Maya's implementation, a comprehensive 'end point detection and protection system,' Chakravayuh, is also being introduced to fortify these systems.

### **National Initiative for Developing and Harnessing Innovations**

- Recently, in a written reply in the Rajya Sabha, the Union Minister of State for Science and Technology highlighted achievement in India's innovation landscape through the NIDHI (National Initiative for Developing and Harnessing Innovations).
- The Department of Science & Technology (DST) launched the NIDHI program in 2016. NIDHI also involves collaboration with

other key entities to encourage startups.

### **What is the National Initiative for Developing and Harnessing Innovations (NIDHI)?**

- The NIDHI is a groundbreaking initiative designed to drive innovation, support startups, and create a thriving entrepreneurial ecosystem in India.
- NIDHI comprises various components that provide a comprehensive framework for promoting and accelerating innovation-driven enterprises across the nation.

### **Components of NIDHI Program:**

- NIDHI-PRAYAS (Promoting and Accelerating Young and Aspiring Innovators and Startups):
- Focuses on converting innovative ideas into tangible prototypes.
- Offers mentoring and financial support at the Proof-of-Concept level.

### **NIDHI Entrepreneurs-In-Residence (EIR) Program:**

- Provides fellowships to students pursuing entrepreneurship.
- Aims to nurture and encourage young entrepreneurs.

### **NIDHI Seed Support Program:**

- Offers early-stage seed funding to startups.
- Enables startups to embark on their innovation journey.

### **NIDHI Accelerator Program:**

- Speeds up the investment readiness of startups.

- Equips startups with the resources needed for growth and scaling.

### **Technology Business Incubators (TBIs) and Centres of Excellence (CoE):**

- Establishes state-of-the-art infrastructure for incubating startups.
- Fosters innovation in technology sectors.

### **NIDHI-Inclusive Technology Business Incubators (iTBI) program:**

- Strengthens the innovation and startup incubation ecosystem in Tier II and Tier III cities.
- The iTBI program has helped increase entrepreneurial inclusiveness in terms of geographies, gender and persons with special abilities.

### **Key Players and Collaborators:**

- Council of Scientific and Industrial Research (CSIR):
  - NIDHI collaborates closely with CSIR to shape and develop cutting-edge incubation facilities.
  - Plays an active role in conceptualizing and developing advanced incubation facilities.
  - Supports translating technology and products, benefiting society, industry, and the country.
- Department of Biotechnology (DBT) through Biotechnology Industry Research Assistance Council (BIRAC):

- NIDHI joins hands with DBT and BIRAC to encourage startups, entrepreneurs, and innovators in the biotechnology domain.
- Through strategic collaboration, they drive translational research and facilitate the creation of affordable biotech solutions.
- Supports startups, entrepreneurs, and innovators in developing affordable products and technologies.
- The progress made through BIRACs incubation program include setting up of 75 Incubation Centers supported through BIRAC's BioNEST and E-YUVA (Empowering Youth for Undertaking Value Added Innovative Translational Research) schemes of BIRAC across the country, around 900 innovative projects supported under Biotech Ignition Grant (BIG).
- Ministry of Defence (MoD):
  - Collaborating with MoD's Innovations for Defence Excellence (iDEX), NIDHI contributes to a dynamic ecosystem for innovation.
  - This partnership engages industries, startups, and R&D institutes to drive advancements in defence and aerospace technologies.
- Ministry of Electronics & Information Technology (MeitY):
  - NIDHI's partnership with MeitY in the Technology Incubation and Development of Entrepreneurs (TIDE 2.0) Scheme empowers tech-driven startups.
  - Together, they provide financial and technical support to foster technology-based entrepreneurship.
- Indian Council of Agricultural Research (ICAR):
  - Collaborating with ICAR's National Agriculture Innovation Fund, NIDHI empowers agri-tech startups.
  - Their joint efforts establish Agri-business Incubator (ABIs) centres, driving innovative solutions in agriculture.
- Department of Science and Technology:
  - The foundation of DST was laid on 3rd May 1971 along the model of National Science Foundation (NSF), USA.
  - It provides funding and also makes policies and co-ordinates scientific work with other countries.
  - It empowers scientists and scientific institutions and also works with a highly distributed system permeating stakeholders ranging from school college, PhD, Postdoc

students, young scientists, startups and NGOs working in Science & Technology.

### What is the Status of India's Innovation and Startup Ecosystem?

- India is ranked 40th out of 132 among the top innovative economies globally as per the Global Innovation Index (GII) 2022.
- India has emerged as the 3rd largest ecosystem for startups globally as of 31st May 2023.
- As of June 2023, India is home to 108 Unicorns with a total valuation of USD 340.80 Bn.
- Out of the total number of unicorns, 44 unicorns were born in 2021 and 21 unicorns were born in 2022.
- India's Gross Domestic Expenditure on R&D (GERD) as a percentage of GDP was 0.65% in 2017-18, which is lower than the global average of 2.2% and much lower than the leading innovators such as Israel (4.9%), South Korea (4.5%), and Japan (3.2%).
- India faces issues such as funding, revenue generation, and supportive infrastructure in its innovation and startup journey.
- India's public sector accounts for about three-fourths of the total R&D expenditure in the country, while the private sector contributes only about one-

fourth. This is in contrast to the global trend, where the private sector plays a dominant role in R&D spending.

### What are the Other Initiatives Related to Encourage Startup and Innovation in India?

- Fund of Funds for Startups (FFS) Scheme.
- Credit Guarantee Scheme for Startups (CGSS).
- Startup India Hub.
- Startup India Seed Fund Scheme (SISFS).
- Centres of Excellence.
- Startup India Action Plan (SIAP).



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## XII. A. InterNational

### Iraq Eliminates Trachoma as a Public Health Problem

- Recently, Iraq achieved a Milestone in Global Health by Eliminating Trachoma, a neglected tropical disease and the world's leading infectious cause of blindness.
- Iraq has joined the league of 17 countries in eliminating trachoma, according to the World Health Organization (WHO).
- The WHO has recognized Iraq as the 50th country to eliminate at least one neglected tropical disease.
- Despite substantial progress, trachoma is still endemic in six countries in the WHO's Eastern Mediterranean Region.
- Trachoma starts as a bacterial infection caused by Chlamydia trachomatis and can lead to blindness if untreated.
- Disease thrives in areas with water shortages, poor sanitation, and fly infestations.
- WHO recommends the SAFE strategy (Surgery, Antibiotics,

Facial cleanliness, and Environmental improvement) to eliminate trachoma.

### G20 Culture Ministerial Meeting and B20 Summit 2023

- Recently, the Prime Minister (PM) of India concluded the G20 Culture Ministerial Meeting in Varanasi, Uttar Pradesh, with a consensus on safeguarding cultural heritage highlighting repatriation and addressing threats to assets.
- Additionally, the PM also addressed the Business 20 (B20) India 2023 summit in New Delhi.

### Key Highlights of the G20 Culture Meet

- The "Kashi Culture Pathway" document identified various threats to cultural heritage, including looting, illicit trafficking of cultural property, destruction of cultural sites, desecration of relics, and more.
- These threats can lead to the irreversible loss of cultural assets, disrupt socio-cultural practices,

and affect the cultural, human, economic, and social rights of people and communities.

- Culture ministers from G20 countries expressed concerns about the rise of online platforms enabling illicit trafficking of cultural property and emphasized the need for potential regulations to address this issue.
- Ministers highlighted the connection between the destruction and trafficking of cultural property and organized crimes like money laundering, corruption, tax evasion, and terrorist financing, especially in conflict situations.

### Prime Ministers' Museum:

- The PM of India highlighted the "Prime Ministers' Museum" in New Delhi, which showcases India's democratic heritage and emphasized the development of the "YugeYugeen Bharat" National Museum, set to become the world's largest museum showcasing India's history and culture spanning over 5,000 years.



### **B20 India 2023 Theme:**

- The theme for the B20 India is R.A.I.S.E. This stands for Responsible, Accelerated, Innovative, Sustainable, Equitable Businesses.

### **India and Greece Relations**

- Recently, India and Greece have taken a significant step by upgrading their relationship to a strategic partnership. The partnership aims to double trade, enhance defence and security collaboration, and address shared challenges.
- On this occasion, the Greek President Katerina Sakellariopoulou conferred the Prime Minister (PM) of India with "The Grand Cross of the Order of Honour".



### **INDIA GREECE RELATIONS**

- The Indian PM paid tribute at the 'Tomb of Unknown Soldier' in Athens.
- Main Areas of Cooperation Under the Strategic Partnership
  - 1] Defence and Security:
  - 2] Maritime Security and Adherence to International Law:
  - 3] Culture and Tourism:
  - 4] Trade and investment:
  - 5] Mobility and Migration Partnership Agreement (MMPA):
  - 6] Broad Spectrum of Collaboration:

### **India and Kenya Signed a MoU for Collaboration in Shipbuilding**

- On a visit to India, the Kenyan Cabinet Secretary for Defence signed an MoU with India's defence minister for capacity building and collaboration in ship design and construction.
- The two Ministers emphasised on the need for deeper maritime security cooperation in IOR and agreed for a joint training in counter-insurgency and UN peacekeeping domains.
- Kenya is located in East Africa between the Indian Ocean and Lake Victoria.
- Kenya is significant for India in the geopolitics of Western Indian Ocean. It is also an active member of the African Union with whom India has a long-established connection.

### **China and Bhutan Meet to Delimit Boundary**

- Recently, China and Bhutan held the 13th Expert Group Meeting (EGM) in Beijing, focusing on boundary delimitation. The meeting marked the establishment of a Joint Technical Team on the Delimitation of the China-Bhutan Boundary.
- As both nations aim to expedite boundary resolution, this move holds implications for the broader regional context, including India.
- Both nations expressed their commitment to expedite efforts

towards achieving a resolution on the disputed boundary.

- Plans were laid out for the upcoming 14th round of boundary talks to maintain the encouraging pace.
- The meeting addressed the implementation of the Three-Step Road Map, reflecting the commitment to follow the outlined strategy for expediting boundary negotiations.

### **Nataraja Statue Headed to G20 Summit Venue in Delhi**

- A towering 28-foot Nataraja bronze sculpture, believed to be the world's tallest, is en route to the G20 summit venue in New Delhi, adding a cultural touch to the event.
- The Nataraja statue, weighing 19 tonnes, is composed of eight metals, including gold, silver, lead, copper, tin, mercury, iron, and zinc (Ashtadhatu). It hails from Swamimalai, Tamil Nadu. The statue represents Lord Shiva (Nataraja) dancing.
- Swamimalai is believed to be one of the six holy abodes of Lord Murugan, known as the PadaiVeedugal (Battle Camps) of Lord Murugan. It is also renowned for its Swamimalai Bronze Icons (Logo), which holds a Geographical Indication (GI) tag.
- Nataraja statue crafted using the 'lost-wax' casting method, it follows the Chola tradition, with molten bronze poured into clay molds.



- Chola bronzes hold an esteemed place in the art world for their unique beauty and craftsmanship.

### 15th BRICS Summit

- The 15th BRICS summit hosted by South Africa in Johannesburg, holds significant importance against the backdrop of geopolitical changes and global economic dynamics.
- The theme for the 15th BRICS Summit is "BRICS and Africa: Partnership for Mutually Accelerated Growth, Sustainable Development and Inclusive Multilateralism".

### Expansion:

- BRICS marked its 15th summit by expanding its membership from five to eleven countries, reflecting a concerted effort to enhance its global standing.
- Egypt, Iran, Saudi Arabia, UAE, Ethiopia, and Argentina joined the BRICS fold, amplifying the group's representation across the Middle East, Africa, and South America.
- Full membership will take effect on January 1, 2024.
- The original BRIC members had two things in common: large economies, and high potential growth rates.

### India's Stakes in the BRICS Summit:

- The summit is important for India, as it is the first in-person meeting since the India-China military standoff at the Line of Actual Control.
- India played a key role in drafting membership criteria and promoting strategic partnerships among new entrants.
- India leverages BRICS to expand its network of allies and enhance its geopolitical influence.
- India aims to enhance cooperation with China and Russia for the Leader's declaration.
- The Indian PM proposed to establish a BRICS space exploration consortium to advance cooperation in the field of space technology and research.
- India called for BRICS collaboration under the International Big Cat Alliance in protecting the endangered big cats that live in their countries.

- BRICS members agreed to address the challenges posed by climate change while also ensuring a just, affordable and sustainable transition to a low-carbon and low-emission economy.

### 20th ASEAN-India Economic Ministers' Meeting

- Recently, the 20th ASEAN-India Economic Ministers' meeting was held in Semarang, Indonesia, marking a significant

step in enhancing economic cooperation between India and the ASEAN member countries.

- The bilateral trade between India and ASEAN in 2022-23 amounted to USD 131.5 billion, constituting 11.3% of India's global trade for the same period.

### ASEAN-India Business Council (AIBC):

- The ministers acknowledged AIBC's endeavors throughout 2023, including the 5th ASEAN-India Business Summit held in Kuala Lumpur in March, 2023.
- AIBC is an organization formed by the Governments of ASEAN and India in 2005 with the aim to foster closer business linkages and provide an industry perspective to the broadening and deepening of economic linkages between ASEAN and India.

### Members:

- ASEAN brings together ten Southeast Asian states – Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam – into one organisation.

### India-Bangladesh Relations

- The 14th Joint Group of Customs (JGC) meeting between India and Bangladesh was convened recently, in New Delhi.
- The India-Bangladesh Joint Group of Customs meetings serves as a critical platform

for fostering collaboration on customs-related matters and enhancing the facilitation of cross-border trade.

### Key Outcomes of the 14th JGC Meeting

- **Expansion of Land Customs Stations:** The meeting deliberated on the establishment of new land customs stations, which play a pivotal role in facilitating cross-border trade.
- **Easing Port Restrictions:** The discussion revolved around measures to simplify port restrictions, thereby enhancing the overall efficiency of port operations and reducing trade barriers.
- **Electronic Connectivity of Transit Modules:** Discussions were initiated concerning the electronic connectivity of the respective transit modules of ACMP, signifying a step toward efficient digital collaboration.
- **Pre-Arrival Customs Data Exchange:** Both parties engaged in talks regarding the pre-arrival exchange of customs data. This step aims to expedite the customs clearance process by enabling authorities to prepare in advance.

### Current Major Issues Between India and Bangladesh

- Sharing of Transboundary River Waters
- Illegal Migration.
- Drug Smuggling & Trafficking:
- Growing Chinese Influence in Bangladesh:

### India and the Philippines sign MoU for Enhanced Maritime Cooperation

- Indian Coast Guard has signed a Memorandum of Understanding (MoU) with Philippine Coast Guard (PCG) on enhanced maritime cooperation.
- The MoU seeks to enhance the professional linkage between the two Coast Guards in the domain of Maritime Law Enforcement (MLE), Maritime Search & Rescue (M-SAR) and Marine Pollution Response (MPR).
- The implementation of this MoU will enhance bilateral maritime cooperation between the two nations for ensuring safe, secure and clean seas in the region.
- India and the Philippines are two democratic countries in the Indo-Pacific region that share a common approach towards the Indo-Pacific, emphasizing the importance of a free, open, and stable region.

### Organized Crime and Georgia RICO Act

- Recently, former United States President Donald Trump, along with 18 of his associates, has recently been charged under the Georgia RICO (Racketeer Influenced and Corrupt Organizations) Act.
- The charges encompass a range of alleged criminal activities which mainly include forgery, making false statements, impersonating a public officer,

influencing witnesses, and conspiracy.

- RICO Act has similarities with the Maharashtra Control of Organised Crime Act (MCOCA), 1999.
- Note: Georgia is one of the 50 US states situated in the southeastern mainland of the United States.

### Concerns of Over Deflation in China

- Recently, China's National Bureau of Statistics reported that the Consumer Price Index (CPI) had declined in July 2023 by 0.3% compared to a year earlier, causing Deflation in the Country.

### Deflation

- Deflation is the opposite of Inflation. It refers to a sustained and general decrease in the overall price levels of goods and services in the economy.

### Caused Deflation in China

- The Chinese economy has been struggling for more than a year. The most prominent was a heavy-handed Zero-Covid policy that saw entire cities shut down, sometimes for weeks at a time, in an effort to prevent the spread of the coronavirus.
- The property sector, which in recent years accounted for between 20% and 30% of GDP (Gross Domestic Product), has suffered a severe slowdown, with a number of major developers unable to service their Debts, and many projects left incomplete.

- Increasing unemployment among younger workers is also a problem, with the official jobless rate for people ages 16 to 24 at 21%, and some experts expressing concern that the real number is significantly higher.

### China's Deflation Impact India and the World

- India:
  - **Positive Effect:** If investment in the Chinese economy is lowered owing to the increasing slowing rate of their economy, and now deflation, India could potentially emerge and take over as the manufacturing hub for the developed economies.
  - For India, if economic reforms are accelerated, India can become the next manufacturing hub.
  - **Negative Effect:** China remains one of the biggest importers of iron ore from India. The east Asian country imports almost 70% of Iron-ore from India.
  - Therefore, a slower economy for China would mean the amount of import into China could fall, spelling somewhat doom from India's economy.
- World:
  - **Global Supply Chains:** Many global supply chains are intricately linked with China. If China's export engine is sputtering due to deflation and weak de-

mand, disruptions in supply chains could affect industries worldwide, including those in India that rely on intermediate goods from China.

- **Global Growth:** China is the world's second-largest economy, and its economic health has a significant impact on global growth.
- A sharp decline in China's economic activity due to deflation could lead to reduced demand for goods and services worldwide, contributing to a slowdown in global economic growth.

### Central Banks and Monetary Policy:

- Central banks in various countries might face challenges in managing monetary policy in response to deflation in China.
- Lower global demand could lead to reduced inflationary pressures and impact the effectiveness of interest rate policies.

### Havana Syndrome

- Recently, the Central govt has told the Karnataka HC that it will look into the matter of the 'Havana Syndrome' in India. This was in response to a petition by a Bengaluru resident who had approached the HC requesting a writ of Mandamus for an enquiry on Havana Syndrome in India.
- A Writ of Mandamus is issued to direct a public authority to do its duty.



- Havana Syndrome refers to a set of mental health symptoms including - hearing certain sounds without any outside noise, nausea, vertigo and headaches, memory loss and balance issues.
- Its roots trace back to Havana (Cuba) in late 2016.
- The causes behind Havana Syndrome were not entirely certain but speculated to be "sonic attacks".
- Some US based studies suggest the victims may have been subjected to high-powered microwaves that damaged/interfered with the nervous system.
- Beams of high-powered microwaves may have been sent through a special gadget - a "microwave weapon", however there is no conclusive evidence of their existence.

### Henrietta Lacks: HeLa Cells

- Recently, the Henrietta Lacks' family settled a lawsuit against a biotech company accused of profiting from her cells without her consent, which revolutionized medicine.
- Henrietta Lacks and Why are Her Cells/HeLa Cells Important
- Henrietta Lacks was an African-American woman who died of



cervical cancer in 1951 at the age of 31.

- Without her knowledge or consent, doctors took a sample of her tumour and sent it to a lab, where it was discovered that her cells could grow indefinitely in culture.
- Her cells, known as HeLa cells, became the first immortalized human cell line and one of the most widely used in biomedical research.
- HeLa cells have contributed to many scientific breakthroughs, such as the development of the polio vaccine, gene mapping, cancer treatment, Acquired Immuno Deficiency Syndrome (AIDS) research, cloning, stem cell studies, and Covid-19 vaccines.
- The World Health Organization (WHO) awarded Henrietta Lacks posthumously with a WHO Director-General's award on

October 13, 2021. The award acknowledges her story, which is one of inequity, and recognizes her world-changing legacy to science and health.

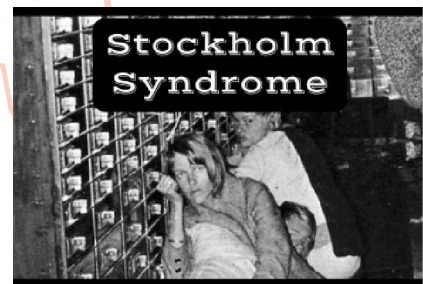
- The WHO Director-General's Award is a prestigious recognition given by the WHO to individuals or groups who have made outstanding contributions to advancing global health, demonstrated leadership and commitment to regional health issues, and embodied lifelong dedication, relentless advocacy, and selfless service to humanity.

### **Stockholm Syndrome**

- Stockholm syndrome is a psychological phenomenon that occurs when hostages or victims of abuse develop positive feelings towards their captors or abusers, and negative feelings towards the authorities or

anyone who tries to help them escape.

- The term was coined after a bank robbery in Stockholm, Sweden, in 1973, when four hostages refused to testify against their captors and even raised money for their defense.
- Stockholm syndrome is not a recognized mental disorder, but rather a coping mechanism that some people use to deal with a traumatic situation.
- It is thought to result from a combination of factors, such as power imbalance, emotional isolation, gratitude for small kindnesses, and survival instinct.



## **B. Defence**

### **Aviation Cooperation Between India and New Zealand**

- Recently, India and New Zealand signed a Memorandum of Understanding (MoU) to boost cooperation in civil aviation.
- Furthermore, a meeting took place between the Agriculture Ministers of both countries, where they not only reaffirmed their commitment to boost agricultural collaboration and invited India to join the Global

Research Alliance(GRA).

### **Key Highlights of MoU on Civil Aviation**

- Building upon an Air Services Agreement, 2016, the MoU aims to further strengthen the aviation partnership between India and New Zealand.
- The cooperation in civil aviation includes scheduling new routes, codeshare services, traffic rights, and capacity entitlement.



- Both India and New Zealand enjoy the privilege of exercising third and fourth freedom traffic rights, enabling them to conduct unlimited services using any type of aircraft.
- New Zealand's airlines can op-

- erate to/from six destinations in India, while Indian airlines can serve Auckland, Wellington, Christchurch, and three additional points in New Zealand, as determined by the Government of the Republic of India.
- Airlines from both countries can freely operate unlimited cargo services using any type of aircraft, with the right to stop at intermediate points and extend their services to destinations beyond, without being restricted by specified route points.

### Indian Army Enhancing Operational Preparedness

- To enhance its overall operational preparedness, the Indian Army has signed contracts for the procurement of 130 tethered drones and 19 tank-driving simulators under Emergency Procurement (EP).
- The long-endurance tether drone systems can be used in high-altitude areas.

### Tethered Drones and Simulators

- Tethered Drones:** Tethered drones are a category of unmanned aerial vehicles (UAVs) linked to a ground-based station via a tether.
- These tethered drone systems, with wings that span both day and night, are meant to be watchful protectors, sending important data and video feeds to enhance border security continuously.
- Beyond aviation, tethered drones are a paradigm shift in surveillance, virtually anchored to the ground while bearing vital loads like cameras and radios.
- With their advanced sensor technology and ability to provide an uninterrupted view of vast areas, Tethered Drones can play a crucial role in enhancing situational awareness and tactical decision-making on the battlefield.
- Simulators:** The simulators are supposed to virtually help in the training of the drivers of tanks and infantry combat vehicles (ICV) and will contribute to minimising wear and tear on tanks and ICVs during training.

### Mahendragiri

- Mahendragiri, the last Project 17A Frigate, will be launched on 1st September 2023.
- The ship is named after a mountain peak in Eastern Ghats located in the state of Orissa.
- Project 17A Frigates are follow-ons of the Project 17 Class Frigates (Shivalik Class), with improved stealth features, advanced weapons and sensors, and platform management systems.
- Mahendragiri is a technologically advanced warship and stands as a symbol of India's determination to embrace its rich naval heritage.
- Project 17A ships have been designed in-house by the Indian Navy's Warship Design Bureau.



### IAF Joins Ex BRIGHT STAR-23

- An Indian Air Force (IAF) contingent is participating in Exercise BRIGHT STAR-23, a multilateral, tri-service exercise hosted biennially at Cairo (West) Air Base, Egypt.
- It marks the IAF's debut in Ex BRIGHT STAR-23, this multinational event features participation from the United States of America, Saudi Arabia, Greece, and Qatar.
- Beyond the exercise's primary objective of refining joint operation planning and execution, the event fosters international bonds and bolsters strategic relations among participating nations.

### Vindhyagiri

- On 17th August 2023, the President of India will launch the Vindhyagiri, a Project 17A Frigate, at the Garden Reach Shipbuilders and Engineers Limited in Kolkata.
- This vessel, the sixth in the Project 17A Frigate series, takes its name from the Karnataka mountain range.
- These frigates are an evolution of the Project 17 Class

Frigates (Shivalik Class), featuring enhanced stealth capabilities, advanced weaponry, sensors, and platform management systems.

- The technologically sophisticated Vindhyagiri pays tribute to its predecessor, the former INS Vindhyagiri, a Leander Class ASW Frigate.
- In line with the nation's commitment to self-reliance, a significant 75% of equipment and system orders for the Project 17A ships are from indigenous firms, including Micro, Small, and Medium Enterprises (MSMEs).



### Reviving Trilateral Cooperation: India, Japan, and Sri Lanka

- India, Japan and Sri Lanka are working towards restarting trilateral cooperation after the cancellation of a joint India-Japan MoU for the East Container Terminal (ECT) project in Colombo.
- However, with India and Japan coming to Sri Lanka's rescue during last year's economic crisis, and offering assistance with Sri Lanka's debt restructuring process, the three countries are exploring new avenues of

cooperation.

- India and Japan share a vision of a Free Open and Inclusive Indo-Pacific (FOIIP).
- India and Japan can work together on renewable energy and grid connectivity projects, the development of Trincomalee, Sri Lanka as an oil pipeline hub, connectivity and people-centric projects like tourism and education.
- The Joint Economic Vision Statement between President Wickremesinghe (Sri Lanka) and the Prime Minister of India outlines catalysing projects with private sector-led investment and execution.

### Exercise 'ZayedTalwar'

- Recently, two ships of the Indian Navy - INS Visakhapatnam, and INS Trikand - visited Port Rashid, Dubai, UAE to conduct bilateral exercise 'ZayedTalwar'.
- The exercise envisages to boost the maritime partnership between the two navies and foster a common understanding of the security challenges in the region.
- Other bilateral exercises between the two countries include: In-UAE BILAT (bilateral naval exercise), Desert Eagle-II (bilateral air force exercise) and Exercise Desert Flag-VI.
- India and the UAE established diplomatic relations in 1972.
- In the year 2022-23, UAE was India's 3rd largest trading partner and 2nd largest export

destination.



### INS Sahyadri and INS Kolkata in MALABAR 2023

- Indian Navy's indigenous warships, INS Sahyadri and INS Kolkata, are set to partake in Exercise MALABAR 2023 that is going to be held near Sydney from August 11 to 21, 2023.
- It will be accompanied by vessels and aircraft from the US Navy (USN), Japan Maritime Self Defence Force (JMSDF), and the Royal Australian Navy (RAN).
- Originating in 1992 as a bilateral endeavor between the Indian Navy and US Navy, the MALABAR series of maritime exercises has evolved remarkably, now encompassing four significant naval forces in the Indo-Pacific Region





## XIII. Miscellaneous

### AadiPerukku 2023

- AadiPerukku, also known as PathinettamPerukku, is a significant festival celebrated in Tamil Nadu to express gratitude for the monsoon season and the life-sustaining properties of water.
- Falling on the 18th day of the Aadi month in the Tamil Calendar, this festival marks the onset of the monsoon season, which brings increased water levels to the rivers and benefits sowing and vegetation.
- During AadiPerukku, people gather near the banks of rivers, especially the Kaveri River, to perform rituals and offer prayers

### World Breastfeeding Week 2023

- On the occasion of World Breastfeeding Week 2023, the United Nations Children's Fund (UNICEF) and the World Health Organization (WHO) lauded the progress made by several countries in increasing exclusive breastfeeding rates, while also highlighting the potential for further advancements if breastfeeding is protected and supported, particularly in the workplace.



### World Breastfeeding Week

- World Breastfeeding Week, observed annually during the first week of August in commemoration of the 1990 Innocenti Declaration.
- In 1990, the Innocenti Declaration was signed by government policymakers, UN health agencies, and other organisations to protect, promote, and support breastfeeding.
- Since 2016, WBW has been aligned with the Sustainable Development Goals (SDGs).
- Breastfeeding can help achieve many of the 17 SDGs, including goals on poverty, hunger, health, education, gender equality, and sustainable consumption.
- Theme 2023: "Let's make breastfeeding at work, work".
- UNICEF and WHO called on governments, donors, civil society and the private sector to step up efforts to help eliminate barriers women and families face to achieving their breastfeeding goals and reach the global 2030 target of 70%.

### 9th National Handloom Day

- National Handloom Day is observed across India on August 7 every year.
- The primary goal of celebrating Handloom Day is to promote the handloom and to recognise the efforts as well as skills of

the community of weavers engaged in the sector.

- It was first celebrated on August 7, 2015. The date holds historical significance, paying homage to the Swadeshi Movement launched on August 7, 1905, which championed indigenous industries and, particularly, handloom weavers.
- Theme for National Handloom Day 2023: "Handlooms for Sustainable Fashion"

### World Sanskrit Day 2023

- In 2023, the celebration of World Sanskrit Day takes place on 31st August.
- Important Facts about World Sanskrit Day

#### History:

- The first World Sanskrit Day was celebrated in 1969.
- World Sanskrit Day or Vishwa Sanskrit Diwas is celebrated on PurnimaTithi (Full moon) of Shravana month every year.
- It serves as a tribute to the birth anniversary of Panini, a distinguished Sanskrit scholar and grammarian.

#### Importance:

- This day is celebrated to show gratitude and respect

### National Sports Day 2023

- 12th National Sports Day was celebrated across India on 29 August.



- **Objective:** To commemorate the birth anniversary of hockey legend Major Dhyhan Chand.
- **First NSD:** August 29, 2012.
- **Significance:** Encourages people of all ages to embrace physical fitness, regular exercise and a healthy lifestyle.
- Serves as a catalyst for developing a robust sports culture in India.



### Highlights of NSD 2023:

- Theme - "Sports are an enabler to an inclusive and fit society".
- National Sports Federations portal launched (for good governance).

### Who was Major Dhyhan Chand?

- Major Dhyhan Chand was a field hockey player who played international hockey from 1926 to 1949.
- He was a three-time Olympic gold medalist who secured gold in the 1928, 1932, and 1936 Olympic editions.

### Significant Declarations: Shiv Shakti, Tiranga, and National Space Day

- Recently, Indian Prime Minister offered his felicitations to the ISRO scientists for their remarkable achievement of Chandrayaan-3 and announced

that August 23 would be commemorated as the 'National Space Day' in India.

- Also, the touchdown site of Vikram Lander has been named as 'Shiv Shakti' and the crash site of Chandrayaan-2's lander in 2019 as 'Tiranga'.

### Onam

- The exciting and colorful Onam festival has started in Kerala, bringing happiness, unity, and a lot of cultural beauty. The festival spans 10 days, commencing on Atham (the first day of Onam) and culminating on Thiruvonam (the final day).
- It is a major harvest festival in Kerala and is celebrated to honour the home-coming of Asura king Mahabali who brought about peace and prosperity in Kerala.
- It is also one of the three major festivals of Kerala, celebrated during the month of Chingam, the first month in the Malayalam calendar, Kollavarsham.
- The other two major festivals of the state are Vishu and Thiruvathira.
- A central aspect of Onam involves crafting Pookkalam, intricate flower rangolis. Alongside, a variety of rituals enrich the festivities, including Vallam Kali (boat races), Pulikali (tiger dances), Kummattikali (mask dances), and Onathallu (martial arts), among other captivating traditions.



### Red Fort: Venue for the India's Independence Day Celebration

- As India proudly celebrated its 77th Independence Day, the spotlight once again fell upon the iconic Red Fort in Delhi.
- Red Fort Became Venue for India's Independence Day Celebration
- The Indian National Army's trials at the Red Fort in the 1940s elevated its symbolism. These trials sparked sympathy for the INA and intensified nationalist sentiments against British rule, reinforcing the Red Fort's role as a symbol of defiance.
- As India approached independence, Jawaharlal Nehru, the first Prime Minister of India, decided to hoist the national flag at the Red Fort.
- On August 15, 1947, Jawaharlal Nehru hoisted the National flag "Tiranaga" at Princess Park, followed by his historic "Tryst with Destiny" speech at the Red Fort on August 16, 1947.
- This was a symbolic gesture of reclaiming the fort from British colonial rule and asserting India's sovereignty and identity. It also marked the culmination

of India's long and arduous struggle for freedom.

- Since then, every year on 15th August, the Prime Minister of India hoists the national flag and addresses the nation from the Red Fort.
- This tradition has become an integral part of India's Independence Day celebrations and reflects its pride and patriotism.
- The fort is a masterpiece of Mughal architecture and a symbol of their cultural and artistic achievements. It was designated as a UNESCO World Heritage Site in 2007

### **AnduriUtsav: Uttarakhand's Whimsical Butter Festival**

- The AnduriUtsav, popularly known as the Butter Festival, celebrated at DayaraBugyal of Uttarkashi district of Uttarakhand culminated recently.
- DayaraBugyal, situated at an altitude of 11,000 feet above sea level, is one of the pristine meadows in the state.
- It is also known as Butter Holi, as people smear each other with butter, milk and buttermilk in a playful manner.
- The festival is a way of expressing gratitude to Lord Krishna, who is believed to have protected the cattle from evil forces while they were grazing in the bugyal.

### **World Tribal Day 2023**

- The International Day of the

World's Indigenous Peoples, also known as World Tribal Day, is observed annually on August 9, as per a resolution by the UN General Assembly in December 1994.

- This date commemorates the inaugural meeting of the UN Sub-Commission on the Promotion and Protection of Human Rights Working Group on Indigenous Populations in 1982, highlighting its significance in promoting and safeguarding the rights of indigenous populations worldwide.
- The theme of World Tribal Day in 2023 is "Indigenous Youth as Agents of Change for Self-determination."
- The day is necessary since indigenous peoples are frequently among the most underprivileged racial and ethnic groupings in society.
- The UN estimates that although indigenous people make up less than 5% of the global population, they are responsible for 15% of the world's poorest people.

### **Arunachal Rang Mahotsav**

- The Arunachal Rang Mahotsav is a four-day festival celebrated across various States in India.
- It aligns with the principles of Ek Bharat Shreshtha Bharat.
- The festival is celebrated with the aim of showcasing Arunachal's history through

drama, 4 plays were scheduled to be performed in Delhi, Mumbai, Kolkata and Guwahati.



### **Quit India Movement Day 2023**

- The Quit India Movement, also known as the August Movement or Bharat ChodoAndolan, was a significant civil disobedience movement launched by Mahatma Gandhi and supported by Indian National Congress on 8th August 1942 with the aim to end British colonial rule in India and achieve full independence.
- The year 2023 marks the 81st anniversary of the Quit India movement.
- On this day, August 8th, 1942, Gandhi gave the famous "Do or Die" speech, at the Gowalia Tank Maidan, now popularly known as August KrantiMaidan.
- The slogan 'Quit India' was coined by Yusuf Meherally, a socialist and trade unionist who also served as Mayor of Mumbai.
- Meherally had also coined the slogan "Simon Go Back".

## முதன்மைத் தேர்வுக்கான உத்தி

1. முதன்மைத் தேர்வுக்குப் படிப்பதற்கு முறையானத் திட்டத்தை வகுத்து அதை முழுமையாகப் பின்பற்ற வேண்டும்.
2. நாட்டு நடப்புகள் குறித்த விவரங்களை தினமும் தயார் செய்ய வேண்டும். புதிய தகவல்களைத் தொடர்ந்து தெரிந்து கொள்ள வேண்டும்.
3. தேர்வுக்குத் தயாராவதில் உறுதியாக இருக்க வேண்டும்.
4. ஒவ்வொரு பாடத்திற்கும் ஒதுக்கப்பட்டுள்ள மதிப்பெண்களைக் கருத்தில் கொண்டு அனைத்துப் பாடங்களுக்கும் தயாராவதற்கு போதிய நேரத்தை ஒதுக்க வேண்டும்.
5. தேர்வுக்குத் தயாராவது அலுப்பூட்டும் வகையில் இல்லாமல் இருப்பதை உறுதி செய்யும் வகையில் கால அட்டவணை தயாரிக்கப்பட வேண்டும்.
6. திருப்புதலின் போது நேரத்தை மிச்சப்படுத்துவதற்காக, முதல் முறை அல்லது இரண்டாவது முறை பயிலும் போது முக்கிய அம்சங்களை அடிக்கோடிட்டு வைத்திருக்க வேண்டும் / முன்னிலைப்படுத்த வேண்டும். நாம் முதன்முறை படிப்பதன் நோக்கம் தேவையற்ற விசயங்களை விலக்கி, நாம் படிக்க வேண்டிய பாடங்களின் அளவைப் பாதியாகக் குறைப்பதுதான். இரண்டாவது முறை பயிலும் போது, நாம் படிக்க வேண்டிய பகுதிகளை, தேர்வுக்கு முன் உள்ள இரண்டு நாட்களில் திருப்புதல் செய்யும் வகையில், மேலும் குறைக்க வேண்டும்.
7. முந்தைய ஆண்டு வினாத்தாள்களின் அடிப்படையில் விடைகளை எழுதிப் பயிற்சி செய்ய வேண்டும்.
8. தேர்வை எதிர்கொள்வதற்கு ஒரு விண்ணப்பதாரர் எந்த அளவுக்குத் தயாராகியிருக்கிறார் என்பதைப் புரிந்துகொள்வதற்காக அடிக்கடி மாதிரித் தேர்வுகளை எதிர்கொள்ள வேண்டும்.
9. பயிற்சியே ஒருவனை முழுமையாக்குகிறது என்பதே முதன்மைத் தேர்வுக்கான மந்திரமாக இருக்க வேண்டும்.
10. எந்தவொரு பாடத்திற்குமான பயிற்சியில் சேரும் தேர்வர்கள், அதற்கான மாதிரித் தேர்வுகளில் முழு ஈடுபாட்டுடன் பங்கேற்க வேண்டும். முதன்மைத் தேர்வுக்கும், முதல்நிலைத் தேர்வுகளுக்கும் இடையிலான முக்கியமான வேறுபாடு என்னவென்றால், முதல்நிலை தேர்வுக்கான மாதிரித் தேர்வுகளை மூன்றாவது நபரின் துணை இல்லாமல் ஆன்லைனிலோ, ஆஃப்லைனிலோ தனித்தே எழுதலாம். ஆனால் முதன்மைத் தேர்வைப் பொறுத்தவரை மூன்றாவது நபரைக் கொண்டு மதிப்பீடு செய்வது மிகவும் அவசியமாகும். மதிப்பீடு செய்யும் மூன்றாவது நபர் ஒரு வல்லுநராகவோ, அல்லது சிறந்த ஒரு பயிற்சி நிறுவனமாகவோ இருக்கலாம்.
11. முதன்மைத் தேர்வு என்பது தேர்வர் அறிந்துள்ள தகவல்களையும் அவரது நினைவுத் திறனையும் மட்டுமே சோதிப்பதாக இல்லாமல், அவர்களின் புரிதலின் ஆழம், அறிவுசார் திறன்கள் ஆகியவற்றை மதிப்பிடுவதை நோக்கமாகக் கொண்டது ஆகும். பொதுபாடத் தாள்களில் அனைத்து வினாக்களுக்கும் விடை அளிக்க வேண்டும். வினாக்களின் தன்மை ஒவ்வொரு தாளுக்கும் மாறுபடும். ஆனால், அதிக வினாக்கள் இருக்கும் என்பதால் தேர்வர் விடைகளை வேகமாக எழுத வேண்டும். விடையளிக்க வேண்டிய வார்த்தைகளின் வரம்பும் அதிகமாக இருக்கக் கூடும்.
12. முதன்மைத் தேர்வைப் பொறுத்தவரை, வார்த்தைகளின் எண்ணிக்கையை கவனத்தில் கொள்ளப்பட வேண்டிய மிக முக்கியமான அம்சமாகும்.
13. முதன்மைத் தேர்வுகளை எழுதுவதற்கான அணுகுமுறையில் தேர்வர்கள் மிகவும் தெளிவாக இருக்க வேண்டும். தேர்வு அறையில், வினாத்தாளைப் பெற்ற பிறகு, விடைகளை வேகமாக எழுத வேண்டி இருக்கும் என்பதால், சிந்திப்பதற்கு நேரம் இருக்காது. எனவே, வினாக்களை புத்திசாலித்தனமாகத் தேர்வு செய்து விடை அளிக்க வேண்டும்.
14. வினாக்களில் தரப்பட்டுள்ள கருத்துரை கொடு, கருத்து தெரிவி, விரிவாகச் சொல், காட்சிப்படுத்து, தெளிவுப்படுத்து போன்ற வார்த்தைகளின் பொருளைப் புரிந்துகொண்டு, அதற்கேற்ற வகையில் உங்கள் எழுத்துத் திறனை வெளிப்படுத்த வேண்டும்.





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