



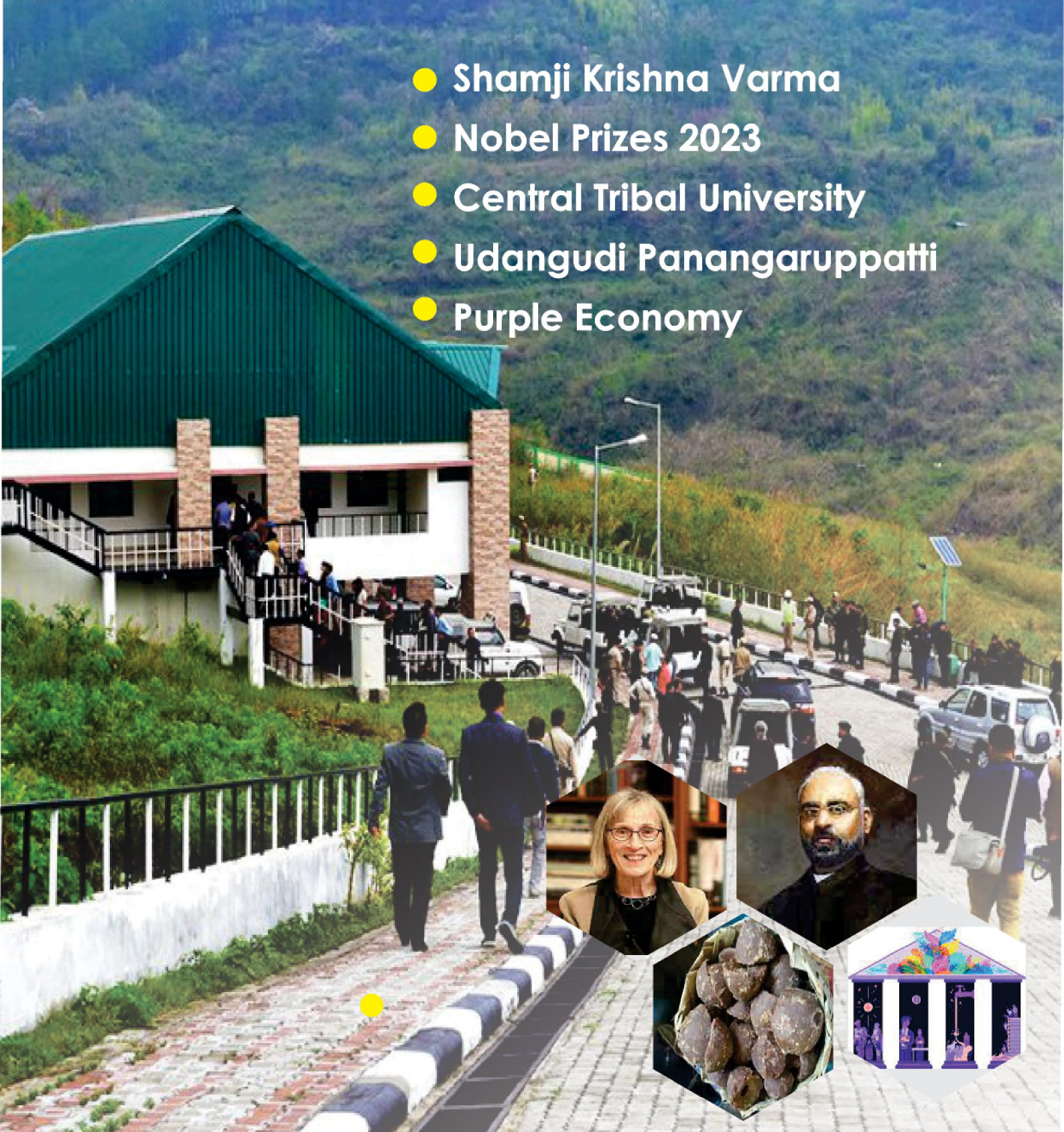
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OCTOBER-2023

போட்டித்தேர்விற்கான மாத இதழ்

- Shamji Krishna Varma
- Nobel Prizes 2023
- Central Tribal University
- Udangudi Panangaruppatti
- Purple Economy





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.



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I. Profile of State

Maharashtra

Introduction

- The state of Maharashtra is located in the western and central part of India.
- It has a coastline stretching 720 kilometres along the Arabian Sea and is naturally fortified by the Sahyadri and Satpuda mountain ranges.
- It is surrounded by Gujarat in the northwest, Madhya Pradesh in the north, Chhattisgarh to the east, Telangana to the southeast, Karnataka

to the south and Goa to the southwest.

- It enjoys a tropical monsoon climate with dense and rich forests and is home to six prime tiger reserves and six national parks.

Demographic profile

- According to the 2011 population census, Maharashtra has a population of 112.4 million, making it the second most populated state after Uttar Pradesh.
- It is the third-largest state in

terms of land area.

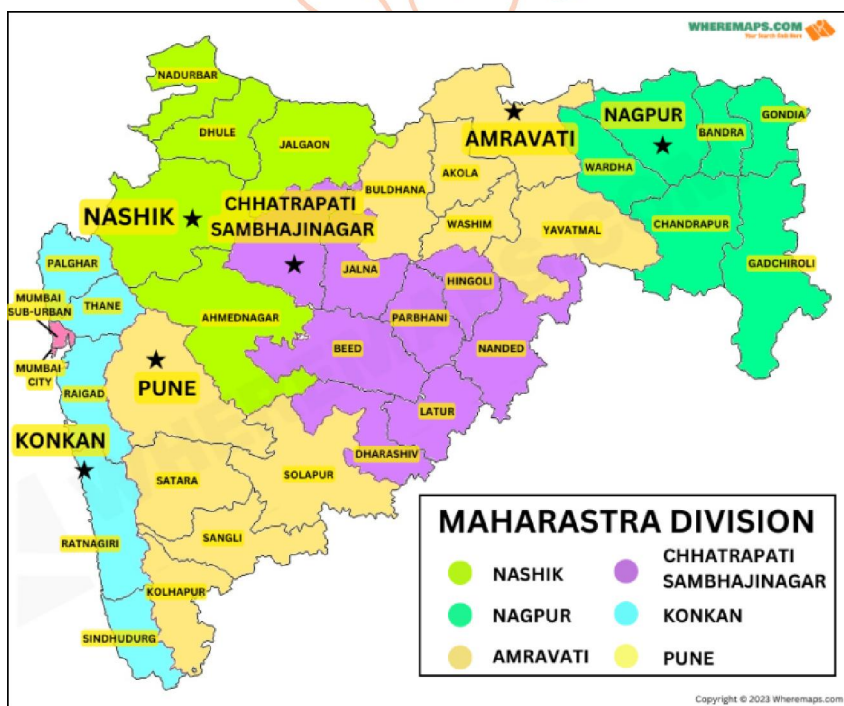
- With 45.2 percent of its population living in towns, Maharashtra is highly urbanised.
- Maharashtra has a sex ratio of 929 females per thousand males and a literacy rate of 82.3 percent.
- The most commonly spoken language is Marathi, with other prominent spoken languages being Hindi, English and Konkani.

Soil

- Black soils formed from degraded lava rocks cover a large portion of the geographical area of Maharashtra.
- This soil is used extensively to grow cotton. Therefore, it is sometimes known as "black cotton soils".
- Moreover, drifts have eroded into light-coloured and medium brown sandy soils along the slopes.
- In the river valleys, saline soils are formed due to obstructed soil drainage and excessive evaporation.

Climate of Maharashtra

- Usually, the climate of Maha-



ashtra is tropical to subtropical (varying with elevation) and wet-dry, with regional differences.

- The southwest monsoons in India arrive on the Mumbai coast during June's first week.
- It usually lasts till September, accounting for around four-fifths of the yearly precipitation.
- Precipitation in the extreme east is high, ranging from 40 to 80 inches.

State animal of Maharashtra

- Maharashtra's state animal is the Indian giant squirrel.
- The Indian giant squirrel's habits and habitat include mixed deciduous and moist evergreen forests, as well as tropical and rainforests.
- The state animals of Maharashtra are arboreal, spending the majority of their hours during the day and night on trees.

State bird of Maharashtra

- The yellow-footed green pigeon is the state bird of Maharashtra and it is also known as the Hariyal bird.

Treron phoenicoptera, the yellow-footed green pigeon, is an Aves species, as are all other bird species.

- According to the Wildlife Protection Act of 1972, the yellow-footed green pigeon is a Schedule-I – IV bird and is categorised as Least Concern by the IUCN.
- This species sustains on fruit, primarily Ficus species, and forages in groups.
- The legs are of vibrant yellow colour. Male and female appearances are similar.

State flower of Maharashtra

- Lagerstroemia speciosa, identified as the giant crape-myrtle, is also known as the Pride of India and is the state flower of Maharashtra.
- This ornamental plant is native to southern Asia's tropical and subtropical regions, including India and the Philippines.

History

- Maratyha rule begins with the arrival of Shivaji in the 17th century.

- After independence the states of Kutch, Sourashtra, Marathi - speaking area in Hyderabad and Marathi - speaking areas in Madhya Pradesh merged to form the State of Bombay.
- The state of Maharashtra came into force on 1st May 1960.

Capital	Mumbai
Spread	3,07,713 sq.km
Language	Marati
Population	11,23,74,333
Lok Sabha Seats	48
Rajya Sabha Seats	19
Assembly seats	288
Districts	36
High Court	Mumbai

II. National Symbol

National Currency

- The Indian Rupee is a symbol that represents India's international identity in terms of money transactions and economic prowess.
- The Indian Rupee symbol represents the Indian ethos.

- The emblem combines the Devanagari "Ra" and the Roman Capital "R," with two parallel horizontal stripes going across the top that signifies the national flag as well as the "equal to" sign (₹).
- The Indian Rupee symbol was

chosen by the Indian government on July 15, 2010.

- The emblem was picked among thousands of concept entries received by the Ministry of Finance through an open competition among resident Indian nationals.
- It was conceptualised and

developed by Udaya Kumar, a postgraduate in Design from the Indian Institute of Technology Bombay.

- Using various digital technology and computer tools, the process of defining and implementing this new identity is already ongoing.



Currency Basics

- Coins are currently issued in India in the values of one rupee, two rupees, five rupees, & ten rupees.
- With effect from June 30, 2011, coins in the denominations of 1 paise, 2 paise, 3 paise, 5 paise, 10 paise, 20 paise, and 25 paise have been withdrawn from circulation and are no longer legal currency.
- Banknotes in the denominations of Rs 10, Rs 20, Rs 50, Rs 100, Rs 200, Rs 500, and Rs 2000 are currently issued in India.
- Because they are issued by the Reserve Bank of India, these notes are referred to as banknotes (Reserve Bank).
- Notes in the denominations of Rs 2 and Rs 5 are no longer printed because these denominations have been coined.
- The Legal Tender status of the Rs 500 and Rs 1,000 denominations of banknotes from the Mahatma Gandhi Series is-

sued by the Reserve Bank of India has been withdrawn by the Government of India by Notification No. 2652 dated November 8, 2016. Cotton and cotton rag are used to make currency paper.

- The 10000 note, first produced in 1938 and then again in 1954, was the biggest denomination note ever created by the Reserve Bank of India.
- In 1946, and again in 1978, these notes were demonetized.

Reserve Bank of India & the People

- The Reserve Bank currently manages currency operations through 19 issue offices in Ahmedabad, Bangalore, Bhopal, Bhubaneswar, Chandigarh, Chennai, Guwahati, Hyderabad, Jaipur, Jammu, Kanpur, Kolkata, Lucknow, Mumbai, Nagpur, New Delhi, Patna, and Thiruvananthapuram, as well as a vast network of currency chests.
- Fresh banknotes are delivered to these offices from the banknote production plants.
- The RBI Issue Offices transmit new notes remittances to approved commercial bank branches.
- The mints provide the coins to the Reserve Bank offices in Hyderabad, Kolkata, Mumbai, and New Delhi (Mint connected Offices).
- These offices then forward them to the Reserve Bank's other offices, which in turn forward them to currency chests and tiny coin depots.
- The currency chests are loaded with banknotes and rupee coins, while the tiny coin depots are stocked with small coins.
- Bank branches receive bank notes & coins from Currency Chests & Small Coin Depots to distribute to the general public.

Comparison of Coin used in India

Coin Type	Metal	Details inscribed	Script & Language
Punch-marked coins	Mostly silver, sometimes copper	Mostly geometrical shapes, plants, animals, and geographical features	None
Indo Greek type	Mostly silver	Name of the issuing ruler with depicting legends	The language was Prakrit, mostly in Kharoshthi script
Kushana type	Mostly gold, but also silver and rarely copper	Figure, name, and title of the ruler on obverse, & the deities on the reverse	Legends in Greek, inscribed in Kharoshthi script

Gupta coinage	Mostly gold coins were issued	A figure of the ruler, with a deity	Brahmi
Chola coins	Gold, silver and copper	Legends of the rulers	Nagari script
Post Gupta	Decline in gold, mostly silver & copper	Names of the rulers, and a motif	Varied with dynasties.

Conclusion

- India's national currency is the rupee (symbol: ₹; code: INR).
- The rupee is divisible into 100 paise (singular: paisa), yet as of 2019, 1 rupee coins are the smallest denomination in use.
- The Reserve Bank of India is in charge of the currency's issuance.

- The Reserve Bank of India administers currency in India and draws its authority from the Reserve Bank of India Act, 1934.
- A new rupee sign (₹) was officially implemented in 2010.
- It was created by combining the Devanagari consonant "₹", "ra"

with the Latin capital letter "R" without the vertical bar.

- The parallel lines at the top (with white space between them) are considered to be a reference to the tricolour Indian flag, as well as a representation of the country's intention to minimise economic inequity.
- On July 8, 2011, the first generation of coins bearing the redesigned rupee symbol went into circulation.
- Previously, India used the symbols "Rs" and "Re" to represent several rupees and one rupee, respectively.

III. Eminent persons, Sports, Awards

1. Eminent Persons

Shyamji Krishna Varma

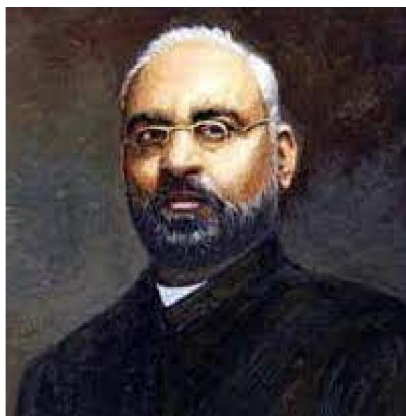
- **Context:** On the occasion of Shyamji Krishna Varma's Jayanti, the Prime Minister paid tribute to the great revolutionary and freedom fighter.

About Shyamji Krishna Varma:

- Shyamji Krishna Varma was an Indian revolutionary fighter, patriot, lawyer, and journalist. He was born in Mandvi, Gujarat on October 4, 1857
- He was the first Indian M.A. and a scholar in Sanskrit and English.
- He founded the Indian Home Rule Society, India House, and The Indian Sociologist in London

- He moved his base from England to Paris after criticism by the British. After the outbreak of the First World War (1914-18), he moved to Geneva in Switzerland and spent the rest of his life there. He died on March 30, 1930

- Became the first President of Bombay Arya Samaj.



Karthyayani Amma

- Karthyayani Amma, an inspirational figure in Kerala's adult literacy program, has passed away at the age of 101. In 2018, she gained widespread attention by becoming the top scorer in the state literacy mission's Akshara Laksham project, which is the flagship adult literacy program.
- At the age of 96, she scored an impressive 98 out of 100 marks in an exam that assessed her writing and mathematical skills. Her dedication to learning was further recognized when she was honoured with the Nari Shakti Puraskar

Ethical Values shown by her:

Ethical Values	Description
Perseverance	Karthyayani displayed a strong commitment to learning and education at an advanced age, defying traditional expectations.
Diligence	She diligently worked to improve her literacy and mathematical skills, scoring exceptionally well in her exams.
Determination	Her determination to learn English and engage with new skills was evident when she expressed her desire to receive a laptop for this purpose from Kerala's Chief Minister
Inspiration	Karthyayani served as an inspiration to numerous school dropouts, motivating them to pursue education and self-improvement.
Empowerment	Through her actions, she demonstrated the empowerment that comes from education, proving that it's never too late to learn
Generosity	She donated her two month's Old age pension for COVID relief efforts

Naik Yeshwant Ghadge

- Naik Yeshwant Ghadge was an Indian war hero who served during World War II's Italian campaign (1943-45). He epitomizes the forgotten Indian heroes of the war.
- Ghadge, at the age of 23, single-handedly captured an enemy post in Montone, Italy. He was posthumously awarded the Victoria Cross, Britain's highest military honour.
- Indian soldiers, part of the British Indian Army, contributed over 2.5 million troops to the Allied war effort, with about

50,000 participating in the Italian campaign.

- Usage: The example shows values of Bravery, Duty and Sacrifice, Valour, and Service

Sir Syed Ahmed Khan

- **Context:** Sir Syed's 125th birth anniversary coincides with the passing of the Women's Reservation Bill.
- Sir Syed Ahmed Khan, a prominent figure in promoting modern education and advocating reforms, had complex and evolving views on women's empowerment and education:
- **Conflicting Views:** While he

was known for his efforts to promote modern education among Muslims, Sir Syed held conflicting views on women's education.

- **Educational Institution:** He established the Mohammed-an Anglo-Oriental College at Aligarh, indicating his commitment to education. However, his approach to women's education was conservative, advocating a "disorganised tutor-based home education" for them.
- **Concerns About Education:** Sir Syed believed that women's education could potentially jeopardize their primary role in life, which, in his view, was marriage. He supported gender segregation and opposed co-education, reflecting a somewhat feudal mindset.
- **Advocate for Women's Empowerment:** Despite his conservative views on women's education, Sir Syed was a strong advocate for women's empowerment. He criticized harmful practices like female infanticide, polygamy, and child marriage through the Aligarh Institute Gazette.
- **Influence of European Experience:** Sir Syed's interactions with women in Europe during a visit in 1869-70 had a significant impact on his views. He admired the freedom enjoyed by women in Europe and believed that the rejection of women's education by Muslims had contributed to the community's decline.

2. Sports

IOC amends the Olympic Charter to strengthen its human rights commitments

- The International Olympic Committee (IOC) has made amendments to the Olympic Charter to strengthen its human rights commitments during its 141st Session. These changes include additional wording in the Fundamental Principles of Olympism.
- They aim to promote and respect human rights across their three spheres of activity:** as an organization, as the owner of the Olympic Games, and as the leader of the Olympic Movement.
- Additionally, the IOC's Framework on Fairness, Inclusion, and Non-Discrimination aims to ensure inclusion in elite sports without discrimination based on gender identity or sex variations while preserving fair competition.

About IOC:

- The International Olympic Committee (IOC) (founded: 1894; HQ: Lausanne, Switzerland)** is a non-governmental sports organization responsible for organizing the Olympic Games and governs National Olympic Committees (NOCs). In 2009, the UN General Assembly granted the IOC Permanent Observer status. The IOC Session is the annual meeting of IOC

members where each member has one vote, and its decisions are final.

Hangzhou Asian Games 2022

- Context:** India achieved a historic milestone at the Hangzhou 19th Asian Games with a record-breaking medal haul of 107 medals, including 28 gold, 38 silver, and 41 bronze. The

game was delayed due to the COVID-19 pandemic.



Hangzhou 2022
Asian Para Games

Notable features of this year's Game:

Feature	Description
Total Medals	India secured a total of 107 medals, including 28 gold, 38 silver, and 41 bronze (India's best in Asian Games)
Improved Ranking	India's performance elevated its rank to fourth place (after China, Japan and South Korea), up from eighth in the 2018 Asian Games.
Athletics Excellence	Neeraj Chopra's gold in javelin throw and a total of 29 medals, including six gold, in athletics.
Historic Badminton Win	Satwiksairaj Rankireddy and Chirag Shetty secured India's first Asian Games doubles gold in badminton.

About the Asian Games:

- The Asian Games, also known as Asiad, is a major continental multi-sport event held every four years, featuring athletes from across Asia. The Games were initially regulated by the Asian Games Federation (AGF) from 1951 to 1978. Since 1982, they have been organized by the Olympic Council of Asia

(OCA) after the dissolution of the AGF. These Games are recognized by the International Olympic Committee (IOC) and are considered the second-largest multi-sport event globally, following the Olympic Games.

India will bid for the 2036 Olympics

- Context:** Prime Minister, Narendra Modi, announced India's

bid to host the 2036 Olympic and Paralympic Games, expressing the nation's long-standing dream to do so.

- Furthermore, India will also bid to host the Youth Olympic Games in 2029

Rules about Hosting City for the Olympics:

- **Bidding:** National Olympic Committees select cities within their territories to bid for hosting the Olympic Games, with the Paralympic Games automatically included in the bid.
 - The application to host the Games is made by the chief authority of the city, with the support of the national government.
- **Selection:** The host for future Olympic Games is chosen by the members of the International Olympic Committee (IOC) during their Session. through a majority vote by secret ballot, with each active member having one vote.
- **Elimination:** In case of no

majority in the first round, the candidate with the fewest votes is eliminated, with further rounds if needed.

- **Selection Process:** Behind-the-scenes negotiations now determine hosts, as seen in Brisbane's selection for the 2032 Olympics.
- **2036 Host:** The 2036 host will be chosen not before 2026 or 2027.

FIDE World Cup

- **Context:** The Prime Minister recently congratulated Raunak Sadhwani on his victory at the FIDE World Junior Rapid Chess Championship 2023

About FIDE World Cup:

- The FIDE World Cup, established in 2000 by the International Chess Federation (FIDE), encompasses various iterations. Since 2005, it's been a 128-player single-elimination chess tournament, a vital part of the World Chess Championship qualification. The format includes 7 rounds of "mini-

matches" with 2 games each, followed by rapid and blitz tiebreaks if needed. The final consists of 4 games before tiebreaks.

About FIDE:

- **The International Chess Federation or World Chess Federation,** commonly referred to by its French acronym FIDE, is an international organization (HQ: Lausanne (Switzerland); Founded 1924) that connects the various national chess federations and acts as the governing body of international chess competition. It was
- FIDE was constituted as a non-governmental institution. It is the governing body of the sport of chess and regulates all international chess competitions. It was recognized by the International Olympic Committee as a Global Sporting Organization in 1999. It has 199 countries as affiliate members (including India), in the form of National Chess Federations

3. Awards

2023 SASTRA Ramanujan Prize

- **Context:** Ruixiang Zhang, an Assistant Professor at the University of California, Berkeley, USA, will receive the 2023 SASTRA Ramanujan Prize for his exceptional contributions to mathematics.



About Dr. Zhang's work

- His work spans various areas of mathematics, including analytic

number theory, combinatorics, Euclidean harmonic analysis, and geometry.

About the Prize:

- The SASTRA Ramanujan Prize, established in 2005, is presented annually by SASTRA University in Tamil Nadu on Ramanujan's birth anniversary,

December 22 (at its centre Kumbakonam, the hometown of the renowned mathematician SrinivasaRamanujan).

- It recognizes mathematicians under 32 years old who work in areas influenced by Srinivasa Ramanujan, in honour of his remarkable accomplishments within that age.
- The prize includes a \$10,000 cash award and a citation, and it has gained international recognition. Previous recipients include ManjulBhargava and AkshayVenkatesh

Pink Bollworm (PBW) 2023 Nobel Prize in Physics (Seeing electrons in brief flashes of light)

- **Context:** The 2023 Nobel Prize in Physics was awarded to Pierre Agostini, FerencKrausz, and Anne L’Huillier for their groundbreaking experiments that have allowed scientists to generate attosecond pulses of light.

Electrons

- The electron is a subatomic particle with a negative elementary electric charge. Electrons rapid movement made them challenging to study directly. Scientists had to rely on averaging their properties.

Electrons hard to capture

- **Exposure Time Analogy:** To understand why electrons were hard to capture, think of taking a picture of a race car. Longer exposure times result in blurry

images, while shorter exposure times yield sharper pictures. If a normal camera is used to capture a race car, the image will be blurred. But a high shutter-speed camera can freeze motion and capture a clear image of the car.

- Electrons move so quickly that capturing them requires extremely short pulses of light such as attosecond.

Attosecond Timescale

- Electron dynamics occur on the attosecond timescale, which is

a billionth of a billionth of a second (1×10^{-18} of a second), much faster than femtoseconds (a millionth of a billionth of a second) associated with atomic movements.

The Previous Limitations in generating attosecond pulses of light

- Until the 1980s, scientists could produce femtosecond pulses, but technology limitations prevented shorter pulses. However, studying electrons required even shorter pulses.

Applications of Attosecond pulses:

Application	Description	Examples
Atomic and Molecular Imaging	Attosecond pulses enable the capture of ultrafast processes within atoms and molecules, providing insights into their dynamics.	Studying electron movement within molecules.
Materials Science	Attosecond spectroscopy aids in understanding and manipulating materials at the quantum level, essential for advanced materials.	Investigating properties of nanoscale materials.
Electronics	Attosecond pulses can be used to develop faster electronic devices by examining electron behaviour on extremely short timescales.	Enhancing the speed of microprocessors.
Catalysis	Studying ultrafast chemical reactions with attosecond precision contributes to improving catalytic processes in chemistry.	Investigating catalysts for cleaner energy production.

Medical Diagnostics	Attosecond pulses can identify molecules based on their fleeting signatures, potentially advancing medical diagnostic techniques.	Detecting specific biomolecules in medical tests.
Telecommunications	Attosecond technology can lead to better telecommunications systems, enhancing data transfer rates and network efficiency.	Improving data transmission in fibre optic networks.
Spectroscopy	Attosecond spectroscopy allows for detailed examination of molecular spectra, aiding in the study of complex molecules.	Analyzing the electronic structure of organic compounds.

2023 Nobel Prize in Chemistry: Quantum Dots

- **Context:** The 2023 Nobel Prize in Chemistry was awarded for the discovery and synthesis of quantum dots, tiny particles with unique optical properties due to their small size.

Quantum Dots

- Quantum dots are tiny particles, just a few nanometers in size, with unique optical properties due to their small size. While their atomic structure is the same as bulk materials, quantum dots' properties can be altered by adjusting their size.
- At the nanoscale, these particles exhibit size-dependent characteristics influenced by quantum forces, which differ from macroscopic physics governed by gravity.
- Physicists in the 1970s discov-

ered that adding elements like gold, silver, cadmium, sulphur, or selenium could modify the optical properties of glass, but the synthesis of quantum dots had not yet been achieved.

Contributions of the scientists:

- **Dr Alexei I Ekimov :** In the early 1980s, Dr Ekimov pioneered the creation of size-dependent quantum effects in coloured glass. He conducted research on glasses tinted with copper chloride, which, when heated and cooled under different conditions, resulted in glass with varying light-absorbing properties due to the formation of differently sized copper chloride crystals.
- **Dr Louis E Brus :** In 1983, Dr.Brus and his colleagues took a significant step by producing similar crystals in a liquid solution instead of glass. This innovation allowed for more

precise manipulation and study of the crystals

- **Dr Mounji G Bawendi :** Dr.Bawendi and his team, in 1993, developed a technique to create well-defined quantum dots with high optical quality. Their process involved injecting a substance into a heated solvent and adjusting the temperature to control the size of nanocrystals. The resulting quantum dots had a smooth exterior surface, making them suitable for a wide range of applications

2023 Nobel Prize for Literature: Jon Olav Fosse

- **Syllabus:** Arts and Culture: Literature, Prizes, Awards
- **Context:** Norwegian author Jon Olav Fosse has been awarded the Nobel Prize for Literature in 2023 for his innovative plays and prose that 'give voice to the unsayable aspects of the human experience'

Features of his work:

- His work is characterized by a radical reduction of language and dramatic action, which expresses powerful human emotions like anxiety and powerlessness in simple terms. Fosse writes in Norwegian Nynorsk, the less common version of the Norwegian language.
- The 2022 Nobel Prize in Literature was awarded to French author Annie Ernaux for her fearless exploration of personal memory, delving into its origins, estrangements, and col-

lective constraints with clinical precision and courage.

About the Nobel Prize

- It encompasses several categories, including Peace, Literature, Physics, Chemistry, Physiology or Medicine, and Economic Sciences. The Nobel Foundation, a private institution established in 1900, oversees the administration of the prizes and ensures the independence of the prize-awarding institutions.

Examples of Ethics (MoungiBawendi, Nanded hospital deaths, KatalinKariko)

- MoungiBawendi, a 2023 Nobel chemistry prize winner and MIT professor, achieved great success in the field of quantum dots. However, his journey had a rocky start.
- During his undergraduate years at Harvard University in the late 1970s, he failed his very first chemistry exam, scoring just 20 out of 100, the lowest grade in his class. This experience initially shook him, but instead of giving up, Bawendi persevered.
- He realized that he needed to learn how to study effectively, and he went on to excel in his exams, scoring 100s on most of them.
- Bawendi’s message to young people is to persevere and not let setbacks destroy their ambitions. “You have a setback, but you can persevere and

overcome this and learn from your experience, which obviously I did,” he said. “I learned how to become successful as a student,”.

- **Usage:** This example can be used to show ethical values of Perseverance, Determination, Resilience etc.

Example 2: Nanded hospital deaths

- Recent deaths in a Nanded hospital of 31 people within 3 days (16 being Children) have highlighted the ongoing issues within India’s healthcare sector, particularly the challenge of medicine shortages.

Ethical Issues concerned in the case:

Ethical Issues	Description
Patient Safety	Shortage of essential medicines and staff can compromise patient safety and result in harm.
Accountability	Governments have an ethical duty to provide healthcare; failure to address shortages raises concerns.
Equitable Access	Unequal access to healthcare services raises ethical questions about fairness and justice.
Government Responsibility	The ethical obligation of the government is to efficiently manage healthcare systems and allocate resources.
Transparency	Ethical transparency is essential to inform the public about resource allocation and healthcare quality.
Public Trust	Failures in the healthcare system can erode public trust, raising ethical concerns.
Sanitation and Hygiene	Filthy conditions in hospitals violate ethical standards of cleanliness and patient dignity.

Example 3: KatalinKariko

- She is a Hungarian-born scientist who has been awarded the 2023 Nobel Prize in Medicine. Her work on mRNA paved the way for mRNA vaccines like Pfizer/BioNTech and Moderna.

Ethical Values from her life:

Life Lesson	Example
Perseverance	Despite demotion and grant rejections by the University of Pennsylvania, Katalin Kariko continued her research on mRNA. She chose to persist as a lower-rung researcher, determined to make a difference in her field.
Belief in One's Ideas	In the 1980s, Kariko believed in the potential of mRNA to treat diseases, even when it was considered a dead-end by others (others preferred to work on DNA)
Innovation	Kariko's collaboration with Drew Weissman led to innovative solutions for using synthetic mRNA in vaccines, demonstrating the power of creative problem-solving.
Resilience	Despite being underestimated as a foreign-born woman in a male-dominated field, Kariko remained resilient and achieved remarkable success in her career.

2023 Nobel Prize in Economics: Claudia Goldin

- **Context:** Claudia Goldin, a Professor of Economics at Harvard University, has been awarded the SverigesRiksbank Prize in Economic Sciences in Memory of Alfred Nobel for 2023 (also known as the Nobel Prize in Economics) for her contributions to understanding women's labour market outcomes
- She is only the third woman to receive this honour since its inception in 1969.
- The article can be read in continuation of Saturday's article: Low Female Labour Force Participation Rate in India

About Claudia Goldin:

- Claudia was born in New York, in 1946 and completed her Ph.D. from the University of Chicago in 1972. She is known for her pioneering research into women's roles in the economy, with a focus on historical data from the United States.

Significance of her work:

- Claudia Goldin's work has shed light on important questions about gender differences in the labour market, education, marriage, and parenthood. Goldin's research has provided valuable insights for policymakers and society, helping to address barriers to women's participation in the labour market.

- While her research focused on the U.S., its findings have broader applicability, providing valuable insights into labour market dynamics in many countries.
- 2022 Nobel Prize in Economics was awarded to Ben S. Bernanke, Douglas W. Diamond and Philip H. Dybvig "for research on banks and financial crises." Unlike the other prizes, the economics award wasn't established in Alfred Nobel's will of 1895 but by the Swedish central bank in his memory. The first winner was selected in 1969.

69TH NATIONAL FILM AWARDS

- **Context:** The President of India presented the 69th National Film Awards in New Delhi.
- The National Film Awards were established in 1954 to encourage the production of films with high aesthetic and technical standards, and educational and cultural value.
- The awards were originally called "State Awards for Films".
- Awards are given in three sections – Features, Non-Features and Best Writing on Cinema.

Some of the awards include:

- **Dadasaheb Phalke Award:** The highest award, given to recognize the contributions of film personalities to the development of Indian cinema
- **Silver Lotus Award:** Given for

the best feature film on national integration



Best Popular Film Providing Wholesome Entertainment

- **The Role of Cinema in Reflecting Society:** They portray the struggles, triumphs, and challenges faced by individuals and communities. By depicting real-life issues on screen, cinema creates a space for viewers to engage with various perspectives, encouraging them to re-evaluate their own

beliefs and biases.

2023 Nobel Prize for Peace: Narges Mohammadi

- **Context:** Narges Mohammadi, an Iranian activist, has been awarded the 2023 Nobel Prize for Peace for her dedication to various causes.

About Narges Mohammadi:

Background	Description
About	Narges Mohammadi (born 1972) is an Iranian human rights activist, Nobel laureate, journalist, and scientist. She's Vice President of the Defenders of Human Rights Center and she advocates for women's rights and civil disobedience against hijab in Iran. Mohammadi has faced imprisonment and abuse for her activism.
Current Situation	Detained in Iran under charges of "spreading anti-state propaganda" and defamation. Sentenced to a total of 31 years in prison and 154 lashes
Activism and Causes	Advocate for women's rights in Iran Opponent of the death penalty Supporter of political protesters Nobel committee has recognized her dedication to causes aligning with the protests' motto 'Zan – Zendegi – Azadi (Woman – Life – Freedom)' in Iran Member of the Centre for Human Rights Defenders in Iran, founded by Shirin Ebadi for the abolition of the death penalty As a journalist, she wrote many articles arguing for social reforms in Iran and published an essay collection, The Reforms, the Strategy, and the Tactics Wrote 'White Torture' (2022) describing her experiences under solitary confinement and featuring interviews with other Iranian women who underwent similar punishment Organized protests from within the prison with fellow women prisoners
Other Recognitions	2023 PEN/Barbey Freedom to Write Award 2023 UNESCO/Guillermo Cano World Press Freedom Prize Featured in BBC's list of 100 inspiring and influential women in 2022
Nobel Peace Prize	She has become the second Iranian woman to receive the Nobel Peace Prize after Shirin Ebadi (awarded the Nobel Peace Prize in 2003). Shirin was also the first Muslim woman to receive the award

IV. History - Historical Events

Ramleela in Trinidad

- Ramleela, a famous folk theatre tradition from India, has found its way to Trinidad, where it holds cultural significance among the Indian diaspora. This theatrical re-enactment of the Ramcharitmanas, portraying the story of Lord Ram, has been performed in Trinidad, which has a significant Indian population due to indentured labour in the 19th century.
- In the early 19th century, Britain abolished slavery in its colonies, creating an economic crisis for places like Trinidad, which heavily relied on slave labour in the sugar industry.
- To address this labour shortage, plantation owners in Trinidad turned to indentured labour from India, with the first group arriving in 1845. These indentured labourers brought their culture, including the Ramleela tradition, with them to Trinidad.
- Ramlila is a traditional folk performance of the ancient Hindu epic Ramayana. The name literally means "Rama's play". It is performed in northern India during the festival of Dussehra, which is held each year in autumn.
- Ramlila is a series of scenes that include a song, Narration, Recital, and Dialogue.
- Trinidad and Tobago is a dual-island Caribbean nation near Venezuela, with distinctive

Creole traditions and cuisines. About 37% of Trinidad and Tobago's population are of Indian descent (mostly from Bhojpur and Awadh Region).



Gandhi's South African Experience

- **Context:** The article discusses the historical significance of Tolstoy Farm near Johannesburg, where Mahatma Gandhi first experimented with ideas that later became central to his philosophy.
- 2nd October 2023 is Mahatma Gandhi's 154th Birth Anniversary.

About Gandhi's Tolstoy Farm:

- Foundation of Tolstoy Farm: Gandhi established Tolstoy Farm in 1910 while supervising the satyagraha by South African Indians. The farm aimed to be a self-supporting agricultural commune that provided for basic needs and emphasized personal growth and spiritual understanding through hard labour.
- Tolstoy Farm as Gandhi's Labo-

ratory: Tolstoy Farm served as a laboratory for Gandhi to experiment with various principles and ideals, including diet, nature cure, harmonious living with nature, brahmacharya, and more.

- This reflected a shared philosophy with Count Leo Tolstoy and Henry David Thoreau
- **Revival Efforts:** Tolstoy Farm fell into disrepair during the Apartheid era. Post-1994, part of the farm has been developed into a 'Peace Garden,' and there are plans to involve the local community and teach Gandhian ideals.

Conclusion

- In South Africa, Gandhiji witnessed the ugly face of white racism and the humiliation and contempt to which Asians who had gone to South Africa as labourers were subjected. He decided to stay in South Africa to organise the Indian workers to enable them to fight for their rights. He stayed there till 1914 after which he returned to India.

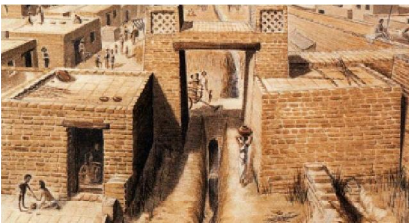
Significance of October 2:

- The United Nations declared October 2 as the 'International Day of Non-Violence' in honour of Gandhi's principles. October 2 also marks the birth anniversary of LalBahadurShastri, India's former Prime Minister, who played a crucial role

during the Indo-Pakistani War of 1965. He was born on October 2, 1904.

Indus Valley Civilization: Burial Site and Town Planning

- **Context:** Scientists have uncovered a sprawling burial site in India, belonging to one of the world's earliest urban civilizations, the Indus Society.



What do we know about the site?

- The excavation of the site started in 2019 near Khatiya village in Kutch Region of Gujarat
- The 40-acre cemetery, discovered, maybe the largest "pre-urban" cemetery of its kind, dating back 5,200 years.
- The Cemetery was in use for about 500 years, spanning from 3200BC to 2600BC, making it one of the oldest graves in the world.
- Excavations have revealed over 500 graves, including unique features like sandstone-lined burial shafts pointing in different directions.
- Artefacts found in the graves include bangles, beads, and pottery (mostly simple inexpensive items).
- Some people were buried with personal ornaments – bangles,

beads, amulets – which could not be passed on to others.

- Some women were buried with a mirror made of copper.
- Adults were buried with different types of vessels associated with serving and storing food.
- Shell bangles were typically found on the left arms of adult females
- Infants and children were not usually buried with any pottery or ornaments.

Indus Valley Civilization (IVC)

- It was a Bronze Age civilization (3300-1300 BCE; mature period 2600-1900 BCE) extending from what today is northeast Afghanistan to Pakistan and northwest India. Along with Ancient Egypt and Mesopotamia, it was one of three early civilizations of the Old World, and of the three the most widespread. It flourished in the basins of the Indus River.

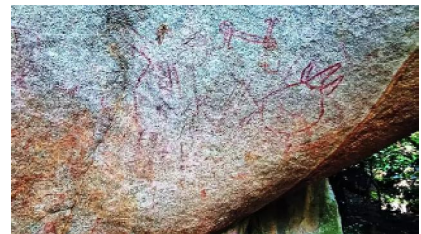
Burial Practices of the IVC:

- Dead bodies were placed in the North-South direction (extended inhumation) and were accompanied by food, pottery, jewellery, etc. The graveyard was within the settlement. They practised three types of burial:-
 - Complete burial
 - Fractional burial (burial of bones after exposure of the body to birds and beasts)
 - Cremation followed by burial of the ashes
- **Significance:** It shows their strong belief in life after death,

which was similar to the belief system of other contemporary civilizations, however; the items kept were not as expensive as other civilizations (unlike those of the elites in Egypt and Mesopotamia).

Mesolithic rock art find adds to Hyderabad's history

- **Context:** A significant archaeological discovery was made in the Manchirevula Forest Trek Park near Hyderabad.
- Ancient rock paintings that appear to date back to the Mesolithic period.
- The paintings, which are in red pigment, depict three tortoises, a fish, and a geometric motif.
- The paintings are approximately 6,000 to 12,000 years old, placing them within the Mesolithic era, which spans from 10,000 to 4,000 BC.
- The site is well-preserved due to its covered nature, and there are plans to create a protective fence and clear a path for visitors to view the art while ensuring its conservation.



Prehistoric rock paintings:

- The term 'Prehistory' refers to the distant past when there was no paper or language, and hence painting and

drawing were the oldest art forms practised by human beings to express themselves, using the cave walls as their canvas. The first discovery of rock

paintings was made in India in 1867–68 by an archaeologist, Archibold Carlleyle, twelve years before the discovery of Altamira in Spain.

previously unknown geological past of the Burtse region, suggesting the presence of a diverse marine ecosystem.

- The findings support the idea that the Himalayas emerged when continental plates were thrust out of the Tethys Sea about 40 million years ago.

Period	Upper Paleolithic (40000 – 10000 BC)	Mesolithic (10000–4000 BC)	Mesolithic Rock Painting
Paintings	Linear representations of animal and human figures	Smaller in size with hunting scenes predominating	Made with natural white kaolin and red ochre pigments
Prominent Locations	Vindhya ranges of Madhya Pradesh, Uttar Pradesh	Langhnaj (Gujarat), Bhimbetka, Adamgarh	Guntur
Themes	Daily life events to sacred and royal images	The naturalistic style for animals, stylistic for humans	Depicts social life and culture, man tilling the land



Significance:

- The discovery of coral reef fossils in Ladakh is significant because it indicates that this region, now a high-altitude desert, was once submerged under a vast ocean. This finding offers insights into Ladakh's geological history, the impact of tectonic activity, and ancient climate conditions.

India-Sri Lanka ferry service

- **Context:** The historic sea route between India and Sri Lanka has been revived with the launch of a passenger ferry service connecting Nagapattinam (India) and Kankesanthurai (Sri Lanka), approx. 110 Km distance, with the aim of strengthening bilateral relations, promoting tourism, and boosting local trade.



- Named 'Cheriyapani,' the service rekindles maritime links dating back to the early 1900s.
- Previously, Indo-Ceylon Express or Boat Mail used to run between Chennai and Colombo but was halted in 1982 due to the Sri Lankan civil war.

Coral Reef Fossils in Ladakh

- **Context:** Geologists have made a remarkable discovery of coral reef fossils at an elevation of 18,000 feet above sea level in the Burtse region, Eastern Ladakh Himalayas.
- These fossils reveal the existence of ancient coral colonies and provide insights into a

About the Coral reefs

- They are underwater ecosystems composed of coral colonies held together by calcium carbonate, which are vital for marine ecology.

Dogra architecture

- **Context:** The Maharaj Gunj market in Srinagar, Jammu and Kashmir, which had lost its historical glory due to encroachments and deviations, is undergoing a revival project.
- Srinagar Smart City Ltd. and the Kashmir chapter of the Indian National Trust for Art and

Cultural Heritage (INTACH) are collaborating to conserve vernacular elements of Kashmiri architecture, particularly those introduced by Dogra Hindu kings between 1846 and 1947.

About Dogra Architecture:

- Dogra architecture is a term used to describe the buildings and structures constructed by the Dogra Hindu kings who

- ruled over Jammu.
- The Dogra kings ruled from 1846 to 1947.
- The Dogras are believed to be of Indo-Aryan descent and migrated to the Jammu region from the Punjab region during ancient times.

Some examples of Dogra architecture include:

- The Mubarak mandi, which was a hub of Dogra culture until 1947.
- The jharokha style of balcony.
- The Amar Mahal Palace.



V. Polity - Political Parties and Political System in India

Hate speech

- **Context:** According to the Association for Democratic Reforms (ADR), a total of 107 Members of Parliament (MPs) and Members of Legislative Assemblies (MLAs) in India have hate speech cases against them.
- The analysis was based on self-sworn affidavits submitted by lawmakers and candidates in t

Key Findings:

- These cases are distributed across various states, with Uttar Pradesh having the highest number of MPs with such cases, followed by Tamil Nadu, Bihar, Karnataka, and Telangana, among others.
- The ruling BharatiyaJanata Party (BJP) has the highest number of MPs with hate speech cases, with 22 of its members being mentioned. Other political

parties, such as the Congress, AamAadmi Party (AAP), AIMIM, DMK, and others, also have lawmakers with hate speech cases against them.

- Hate speech is any form of expression that intends to vilify, humiliate, or incite hatred against a group or individual based on inherent characteristics. Hate speech can include Public speech, Writing, and Nonverbal communication.

Disqualification from Lok Sabha

- **Context:** Lakshadweep Member of Parliament (MP) Mohammed Faizal has been disqualified from the Lok Sabha for the second time this year.
- This decision follows the Kerala High Court's refusal to suspend his conviction in a murder case where he was sentenced to a decade of rigorous imprisonment for attempting to murder.
- A Member of Parliament (MP) can be disqualified from the Lok Sabha for a number of reasons, including:

Disqualification Reason	Description
Conviction	An MP loses their membership if convicted of a crime and sentenced to at least two years in prison. They are also disqualified for six years after the conviction unless the conviction order is suspended.

Defection	If an MP elected as a representative of one political party joins another political party after the election, they are disqualified.
Office of Profit	Holding an "office of profit" under the Government of India or any State government leads to disqualification.
Holding an Office that Parliament Allows	Some offices, as determined by Parliament, do not disqualify MPs if held.
Joining a Political Party After Election	Being elected as an independent candidate and later joining a political party can result in disqualification.

Enforcement Directorate

- **Context:** The Supreme Court of India has ruled that the Enforcement Directorate (ED) must provide the grounds for arrest in writing to the accused at the time of arrest.
- The decision emphasizes that the ED should not engage in vindictive conduct and should act fairly and transparently.
- The ruling came in response to a plea by Pankaj Bansal and Basant Bansal, Directors of the M3M real estate group, who challenged their arrest by the ED under the Prevention of Money Laundering Act (PMLA). The Punjab and Haryana High Court had refused to set aside their arrest.
- The court criticized the ED's style of functioning and declared the arrest as illegal. It clarified that reading out the reasons for arrest to the ac-

cused does not fulfil the legal requirements.

Dalits Converting to Sikhism

- In Bihar's Araria district, many Dalits have migrated to Punjab and converted to Sikhism to escape caste-based discrimination and poverty. They've returned to their villages as Sikhs, aiming to find respect in society and equality, which Sikhism promotes.
- Conversions to Sikhism have also led to changes in their lifestyle, including refraining from eating meat and drinking alcohol.
- Out-migration from Bihar, driven by poverty and lack of opportunities, is a common trend. Caste-based discrimination and exploitation are also significant factors pushing people to migrate.
- Despite the conversion to

Sikhism and some economic improvement, social discrimination still exists in their villages. They hope for recognition as a minority and a change in government records to escape the label of Dalits.

- **Usage:** The example can be used in Ethics/Essay/ Sociology Optional.

Sarah Sunny (India's 1st deaf Lawyer in SC)

- **Context:** Sarah Sunny, a 27-year-old lawyer from Bengaluru, recently achieved a historic milestone by becoming the country's first deaf lawyer to argue in the Supreme Court.
- Her groundbreaking journey began when Chief Justice DY Chandrachud allowed a sign language interpreter to assist her during proceedings. Subsequently, the court-appointed its own interpreter, a first in its history, to ensure her understanding of the proceedings.

Significance:

- Observers believe that Sarah's presence in the top court will promote inclusivity and accommodation for the deaf community within the Indian legal system.
- This achievement has broken stereotypes and is expected to inspire more deaf students to study law, making the legal system more accessible.
- **Usage:** The example can be quoted in Qn related to social justice/ judiciary/ Disability etc.

OTT platforms do not fall under TRAI jurisdiction

- **Context:** The Telecom Disputes Settlement and Appellate Tribunal (TDSAT) in India has ruled that Over the Top (OTT) streaming platforms, like Disney+ Hotstar, do not fall under the jurisdiction of the Telecom Regulatory Authority of India (TRAI).
- Instead, they are governed by the Information Technology Rules of 2021, as notified by the IT Ministry.
- This decision is significant as both TRAI and the Department of Telecommunications (DoT) have been attempting to regulate OTT services, a move that has been contested by the IT Ministry.
- The Telecom Regulatory Authority of India (TRAI) is a government body that regulates the telecommunications sector in India. TRAI was established in 1997 by the Government of India.

Current Conflict in Israel and the Yom Kippur War

- **Context:** The Yom Kippur War, also known as the October War or Ramadan War, fought in 1973 between Israel, Egypt and Syria, is being compared to the current conflict involving Hamas and Israel.

Current happening in Israel

- Israel has declared war on Hamas after the Palestinian militant group carried out un-

precedented attacks on Israeli territory, killing and abducting hundreds of Israeli citizens.

Hamas

- Hamas is a Palestinian political and militant organization that currently governs the Gaza Strip, one of the two Palestinian territories. Though it is headquartered in Gaza City, it also has a presence in the West Bank, in which Fatah exercises control.

Habitat rights

- **Context:** The Baiga Particularly Vulnerable Tribal Group (PVTG) in Chhattisgarh has been granted habitat rights, making it the second PVTG to receive such rights in the state.
- Out of 75 PVTGs in India, only three have received habitat rights, including the Bharia PVTG in Madhya Pradesh, the Kamar tribe, and now the Baiga tribe in Chhattisgarh.



About Habitat Rights:

- Habitat rights are granted under the Forest Rights Act and provide communities with rights over their customary territories, cultural practices, livelihood means, biodiversity knowledge, and protection of

their natural and cultural heritage.

- Habitat rights help safeguard traditional livelihoods and ecological knowledge, and they empower PVTG communities to access government schemes and initiatives to develop their habitats.
- PVTGs are a sub-classification of Scheduled Tribes in India. They are considered more vulnerable than regular Scheduled Tribes.

PVTGs are characterized by:

- Declining or stagnant population
- Low level of literacy
- Pre-agricultural level of technology
- Economically backward
- The Government of India renamed Primitive Tribal Groups (PTGs) as PVTGs in 2006. The Dhebar Commission created the PTG category in 1973.

Tanzania

- **Context:** India and Tanzania have elevated their ties to a strategic partnership level. They signed six agreements covering digital cooperation, culture, sports, maritime industries, and white shipping information sharing.
- Additionally, they agreed on a five-year roadmap to expand their defence cooperation. Both countries are working on a trade agreement in local currencies. India views Tanzania as a valued partner in the Indo-Pacific.

- Tanzania is an East African country known for its vast wilderness areas.
- They include the plains of Serengeti National Park, populated by the “big five” game (elephant, lion, leopard, buffalo, rhino), and Kilimanjaro National Park, home to Africa’s

highest mountain.

Digital India Act 2023 (DIA) and Concerns

- **Context:** The Digital India Act 2023 (DIA) is a significant move by the Ministry of Electronics and Information Technology (MEITY) to establish a future-

ready framework for India’s digital ecosystem.



Need for the Digital India Act (DIA):

Need	Description
Outdated Regulations	The IT Act of 2000 is outdated and inadequate for today’s internet with 850 million users and new user harms.
Inadequacy of Current Regulations	Existing regulations like Intermediary Guidelines are insufficient for governing new-age technologies.
Need for Legal Adaptation	An evolving legal framework is required to address challenges posed by technologies like AI, Blockchain, and IoT.
Addressing E-commerce and Online Content	Growing e-commerce and online content sharing necessitate updated regulations covering consumer protection and content moderation.
Global Alignment and Best Practices	India’s regulations must align with international standards and practices to be effective in the global digital landscape.

Challenges associated with the Digital India Act (DIA):

Challenges	Description
Hinder Innovation and Ease of Doing Business	Stricter regulations, especially in emerging technologies, may hinder innovation and discourage investments and entrepreneurship.
Affect Freedom of Expression	The review of the “safe harbour” principle could affect freedom of expression on online platforms
Infrastructure Requirements	Effective enforcement of the DIA will demand substantial resources, expertise, and infrastructure, necessitating investments in these areas.
Balancing Stakeholder Interests	Balancing the interests of various stakeholders, including tech giants and citizens’ rights, presents a significant challenge that requires inclusive consideration.

Surveillance and Privacy Concerns	Critics raise concerns about certain provisions potentially granting excessive surveillance powers to the government, compromising privacy rights. Strong safeguards are needed to prevent abuse and violations of privacy.
Data Localization and Cross-Border Data Flows	The approach to data localization in the DIA is contentious. While it can enhance data protection and security, it may disrupt cross-border data flows, affecting global businesses that rely on efficient data transfers.

UN General Assembly elects 15 new members to the Human Rights Council

- **Context:** Russia is facing a challenging battle to regain a seat on the United Nations Human Rights Council.
- Russia is competed against Albania and Bulgaria for two seats in the East European regional group.
- The United States and other nations have been actively campaigning against Russia's re-election, citing concerns about its human rights record, including alleged war crimes in Ukraine.
- Human Rights Watch has also criticized Russia and China, stating that they are unfit to serve on the council due to their ongoing human rights abuses.
- By secret ballot, the Assembly elected Albania, Brazil, Bulgaria, Burundi, China, Côte d'Ivoire, Cuba, Dominican Republic, France, Ghana, Indonesia, Japan, Kuwait, Malawi and the Netherlands. All 15 members will serve three-year terms beginning on 1 January 2024
- The United Nations Human

Rights Council (UNHRC) is an intergovernmental body that promotes and protects human rights around the world.

India's Role:

- India plays a key role in shaping MDB reforms to address global challenges.
- India is a significant borrower and beneficiary of MDBs, receiving support in various sectors.
- India is a contributor and shareholder in these institutions, supporting their operations.
- India actively participates in their governance and decision-making processes.

2023 Global Survey on Persons with Disabilities and Disasters

- **Context:** The UN Office for Disaster Risk Reduction (UNDRR) conducted the 2023 Global Survey on Persons with Disabilities and Disasters, following up on the 2013 survey.

About the Survey Report:

- The report was released ahead of International Day for DRR (October 13). Its theme "Fighting inequality for a resilient

future" is aligned with the Sendai Framework.

- **Aim of the survey:** It is aimed to assess the preparedness of persons with disabilities for disasters, accessibility of early warning and risk information, awareness of disaster risk reduction (DRR) plans, and their participation in DRR decision-making.



DRR

- Disaster Risk Reduction (DRR) refers to the practices and strategies aimed at minimizing the risks and vulnerabilities associated with natural and human-made disasters.

Key results of the survey:

- Limited progress in disability inclusion in DRR over the past decade, with no significant regional differences.
- Low awareness of DRR plans among disabled
- Lack of DRR plans addressing the specific needs of persons with disabilities

- Limited participation in local-level DRR decisions by persons with disabilities
- 24% of respondents had been displaced due to crises or disasters, with armed conflict or violence being the leading cause of displacement.

About UNDRR:

- UNDRR (est. 1999; HQ: Geneva, Switzerland) was created to ensure the implementation of the International Strategy for Disaster Reduction and later support the implementation of the Sendai Framework.

Supreme Court's Verdict on Same-Sex Marriage

- **Context:** The Supreme Court of India has rejected pleas seeking to legalize same-sex marriage,

Same-sex marriage

- Same-sex marriage, also known as gay marriage or LGBTQ+ marriage, is a legal union between two individuals of the same gender. It grants them the same legal rights, benefits, and responsibilities as opposite-sex marriages

SC Verdict on Same-Sex Marriage

- The Supreme Court, in a 3:2 verdict, denied constitutional validity to same-sex marriages, as it is a statutory right but not a fundamental right. Therefore, it's a matter for Parliament and state legislatures to address through legislation.

Views of SC judgement:

Issue	Minority View	Majority View
Fundamental Right to Marry	Marriage may not be a fundamental right in itself but has attained significance due to state regulation	Marriage is not a fundamental right
Interpretation of Special Marriage Act (SMA)	CJI Chandrachud was against an expansive reading of the SMA and warned against the court entering the realm of the legislature.	SMA couldn't be interpreted to include same-sex couples, as it's intended for heterosexual couples of different faiths
Queer Couples' Right to Adopt a Child	CJI Chandrachud struck down certain CARA regulations, stating they reinforce the disadvantage faced by the queer community.	However, the Majority view upheld CARA regulation and said since 'Same-sex couples' marriage is not recognised they are not eligible for adoption
Civil Unions for Queer Couples	The CJI saw the right to form intimate associations as part of freedom of speech and expression and suggested a committee to determine the rights available to queer couples in unions.	However, the Majority view disagreed with prescribing a choice of civil unions but suggested the state should facilitate this choice for those who wish to exercise it.

Legal Status of Same-Sex Marriage in India:

- In India, the legality of same-sex marriages is not expressly recognized as a fundamental or constitutional right but is governed by statutory law. In 2018, the Indian Supreme Court decriminalized same-sex marriage.

Views of the Central Government

- Only the legislature (repository of democratic representation and reflects the will of the people) has the right to make such changes in the law.
- Marriage is not confined to the private sphere— The regulation of marriage is very much an issue of acceptance by society – This rationale is the very basis for state recognition of marriage.

Conclusion:

- The way forward includes raising awareness for LGBTQ-IA+ rights, legal reforms like amending the Special Marriage Act, engaging in dialogue with religious leaders, legal challenges to current laws, and collaboration among all stakeholders for a more inclusive society.

10 Years of Belt and Road Initiative (BRI)

- **Context:** The Belt and Road Initiative (BRI), led by Chinese President Xi Jinping, marked its 10th anniversary.

Belt and Road Initiative (BRI)

- The Belt and Road Initiative (BRI) is a global infrastructure development strategy launched by China in 2013. It aims to invest in over 150 countries and international organizations, creating road, rail, and sea routes for trade and connectivity. The initiative, often referred to as "One Belt One Road" (OBOR), is a key part of China's foreign policy and has been compared to the American Marshall Plan.

Objective of BRI:

- The BRI is seen as a way for China to transition to a global power and reshape the global economic order. It further aims to enhance global connectivity through infrastructure development and economic cooperation.
- BRI includes various infra-

structure projects like ports, railways, roads, and power stations. It is set to be completed by 2049, coinciding with the centennial of the People's Republic of China. The initiative includes two principal components: the Silk Road Economic Belt and the Maritime Silk Road. India's Objection to BRI:

- India opposes the BRI due to sovereignty and transparency concerns. It boycotted BRI summits in 2017 and 2019 and hasn't endorsed BRI joint statements by the SCO. The main objection is the China-Pakistan Economic Corridor (CPEC) passing through the Gilgit Baltistan region of India, which India claims.



Ethics committee of Lok Sabha

- **Context:** Lok Sabha Speaker has referred a "cash-for-query" complaint made by a BJP MP against a Trinamool Congress member to the Ethics Committee of the Lower House.
- The complaint is based on evidence from an advocate, which he claims shows the exchange of bribes between the accused and a businessman.
- He also pointed out that a significant number of recent parliamentary questions were

focused on the Adani Group, a conglomerate she has accused of malpractices.

- The Lok Sabha Ethics Committee examines complaints of unethical conduct by members of the Lok Sabha. The committee was established in 2000 by the late Speaker G M C Balayogi. It became a permanent part of the House in 2015. The committee was established in Rajya Sabha in 1997.

The committee's functions include:

1. Examining complaints of unethical conduct by members of the Lok Sabha
2. Making recommendations
3. Formulating a code of conduct for members
4. Suggesting amendments or additions to the code of conduct

About Cash for Query Complaint:

- A "cash-for-query" complaint is an accusation that someone took money in exchange for asking questions in Parliament.
- For example, in 2005, 11 former MPs were put on trial for a "cash-for-query" scam. The sting showed them taking cash to raise questions in Parliament

District officers under the POSH Act

- **Context:** The Supreme Court

has instructed the Indian government and all states and union territories to promptly appoint district officers under the Sexual Harassment of Women at Workplace (POSH) Act.

- **Need for Direction:** The court noted a lack of uniformity in implementing the Act and non-implementation of the Act in several instances.



Directions of SC:

Direction	Description
Ensure the appointment of District Officer	Principal Secretaries of the Ministry of Women and Child Development of every state/UT to ensure the appointment of a District Officer in every district within four weeks under Section 5 of the PoSH Act.
Local Complaints Committees	Each appointed District Officer would constitute Local Complaints Committees to receive complaints from women employed in small establishments with less than 10 workers or cases in which the assailant is the employer himself (Section 6 of the Act).
Tenure	The Chairperson and every Member of the Local Committee shall hold office for a period, not exceeding three years, from the date of their appointment as specified by the District Officer.
Nodal Person	Identify a 'nodal person' within the Department to oversee the implementation of the PoSH Act and coordinate with the Centre.
Compliance Report	Each State/UT Government is to submit a consolidated report of its compliance with the directions to the Centre within eight weeks.
Compliance by Centre	Centre to consolidate reports, and identify/remedy lapses in compliance by State, before filing a consolidated affidavit of compliance within 12 weeks.
Transparency	The court also suggested making anonymized data from annual compliance reports public to enhance transparency

Double Taxation Avoidance Agreement (DTAA)

- **Context:** The Supreme Court of India has ruled that a Double Taxation Avoidance Agreement (DTAA) cannot be enforced unless it is notified under Section 90 of the Income Tax Act.
- This decision may have significant implications for

multinational corporations (MNCs) from Switzerland, the Netherlands, France, and other countries.

Implications:

- The decision may lead to additional tax revenue for the Indian government but could potentially strain relations with tax treaty partners.

- The ruling revolves around the interpretation of the Most Favoured Nation (MFN) clause contained in various Indian treaties with countries that are members of the Organisation for Economic Cooperation and Development (OECD).
- This clause allows for concessions in tax rates on dividends, interest, royalties, or fees for

technical services, similar to concessions given to other OECD countries.

- The Double Taxation Avoidance Agreement or DTAA is a tax treaty signed between India

and another country (or any two/multiple countries) so that taxpayers can avoid paying double taxes on their income earned from the source country as well as the residence country

Portal	IGMS 2.0 Public Grievance Portal
Implementing Agency	DARPG in collaboration with IIT Kanpur
Objectives	Provide instant tabular analysis of Grievances Filed and disposed of. Offer State-wise and district-wise Grievances Filed data. Offer Ministry-wise data. Enhance grievance redressal process with AI capabilities.

VI. Public Awareness and General Administration

EkTareekhEkGhantaEkSaath initiative

- **Context:** The “EkTareekhEkGhantaEkSaath” initiative is a massive voluntary effort for cleanliness in India, endorsed by Prime Minister Narendra Modi.
- The initiative encourages citizens to engage in one hour of “shramdaan” (voluntary labour) for cleanliness at 10 am on October 1st as a tribute to Mahatma Gandhi.
- Various groups and organizations, including Resident Welfare Associations, village communities, NGOs, market associations, faith groups, and the private sector, have come forward to participate in shramdaan at different locations.
- SwachhataPakhwada 2023, with the theme “Garbage Free India,” is organized alongside this initiative and has seen the participation of over 31 crore citizens across the nation in various cleanliness-related activities.

- **Usage:** The example shows values of Environmental Consciousness, Community Engagement, Environmental Stewardship and Social Responsibility.



IGMS 2.0 Public Grievance Portal

- **Context:** The Department of Administrative Reforms and Public Grievances (DARPG) (Ministry of Personnel, Public Grievances and Pensions) launched IGMS 2.0. Public Grievance portal and Automated Analysis in Tree Dashboard portal

Intelligent Grievance Monitoring System (IGMS) 2.0

- IGMS is an artificial intelligence (AI) driven Grievance Monitoring System. It aims to enhance the efficiency of the public grievance redressal process.

About CPGRAMS:

- CPGRAMS is an online platform available 24/7 for citizens to lodge grievances related to service delivery. It connects all Ministries/Departments of the Government of India and States and offers role-based access. Citizens can track grievance status using a unique registration ID and use the appeal facility if not satisfied with the resolution by the Grievance Officer.
- Close to 20 lakh grievances are received annually on the CPGRAMS portal.
- CPGRAMS is now available in 22 scheduled languages.
- Special Campaign 3.0: The campaign has made a significant impact, clearing office space and promoting the eOffice work culture.

'Yashasvini': Women Bike Expedition

- The Lieutenant Governor of Jammu & Kashmir, flagged off the CRPF Women Bike Expedition named 'Yashasvini' from LalChowk, Srinagar.
- This rally is organized by the CRPF in collaboration with the Ministry of Women and Child Development to celebrate women's empowerment. It involves 150 women CRPF officers riding 75 Royal Enfield motorbikes across 10,000 kilometres, passing through 15 states and 2 Union Territories, with the destination being Ekta Nagar, Gujarat, on SardarVal-labhbhai Patel's birth anniversary.



- **Significance:** The expedition symbolizes the resilience and strength of women (Nari Shakti) and aims to promote the "Beti-BachaoBetiPadhao" program of the Women and Child Development Ministry. It also highlights the courage and determination of the Veeranganas of CRPF who protect the nation's integrity and sovereignty.
- **Usage:** The example can be used in Internal security Questions to show how armed forces are also creating awareness of social issues.

Swachh Bharat Mission

- **Context:** A World Bank paper has highlighted a concerning trend of declining regular toilet use in rural India since 2018-19, despite significant improvements in toilet access due to the Swachh Bharat Mission – Gramin (SBM-G) launched in 2014-15.
- While the program led to substantial increases in toilet access in rural areas, the paper indicates that the annual improvements in toilet use have not been linear and that there have been negative trends over the last two years.
- The decline in regular toilet use is most pronounced among Scheduled Caste and Scheduled Tribe socio-economic groups.
- States like Uttar Pradesh, Gujarat, Chhattisgarh, Telangana, Karnataka, and Himachal Pradesh have witnessed a sustained decline in toilet use since 2018, while seven other states have seen uneven declines.

Central Tribal University

- **Context:** The Prime Minister has announced the establishment of a Central Tribal University in Telangana'sMulugu district, with a project cost of Rs 900 crore.
- The university will be named after tribal goddesses Samakka and Sarakka. This initiative is aimed at benefiting the youth, particularly those from tribal communities.
- Additionally, the Prime Minister

has conferred the title of "Institution of Eminence" on the Central University of Hyderabad and provided it with a special fund.



Green war room

- **Context:** The Delhi government has launched a 'green war room' to combat air pollution in the city by implementing the Winter Action Plan and monitoring pollution 24x7.
- Delhi faces severe air pollution, particularly during the winter months, due to various sources such as vehicles, industry, construction activities, and stubble burning in neighbouring states like Punjab and Haryana.

Features:

- The war room will be connected to a mobile application called the Green Delhi app, emphasizing the importance of public participation in addressing the issue.
- The Delhi government will also launch an anti-dust campaign, to address sources of pollution within the city.
- The Green Delhi app allows citizens to report pollution-related complaints, which will be monitored by the green war room.
- According to a report by the

Centre for Science and Environment (CSE), internal sources within Delhi contribute to 31% of the pollution, while external sources from surrounding states contribute 69%.

Guidelines for Suicide Prevention among Students

- The Union Ministry of Education has released draft guidelines to prevent student suicides in schools
- These guidelines are titled UM-MEED (Understand, Motivate, Manage, Empathise, Empower, Develop)

- **Aim of the Guidelines:** The guidelines aim to help schools enhance sensitivity, understanding, and support for students, emphasizing the importance of every child's well-being, "Every Child Matters"

Key Features	Description
School Wellness Team (SwT)	The guidelines propose the formation of a School Wellness Team led by the school principal. These teams should be trained to handle crisis situations and provide immediate support when a student exhibits signs of self-harm.
Teacher and Family Orientation	It recommends conducting annual orientations for teachers and family members to raise awareness about student suicides. Schools are responsible for capacity-building among various stakeholders through these orientations.
Responding to Warning Signs	The guidelines outline specific actions that school individuals or members of the wellness team should take when encountering a student displaying warning signs or attempting self-harm.
Destigmatizing Mental Health Issues	Schools are encouraged to destigmatize mental health concerns such as anxiety, depression, suicide, and substance abuse through activities like storytelling, rallies, posters, exhibitions, and other initiatives.
Safety Measures	The guidelines also suggest practical safety measures, such as locking all empty classrooms and ensuring there are no dark corridors or areas within the school premises.

- **Usage:** The Measures can be used in Case studies or Ethics answers/ Indian Society Answers

Operation Ajay

- **Context:** India has initiated "Operation Ajay" to evacuate its citizens from conflict-stricken Israel.
- This marks the second evacuation operation of the year, following Operation Kaveri, which

brought back Indian citizens from Sudan earlier.

- The decision to initiate Operation Ajay comes in response to recent conflicts in the region, including a Hamas attack on Israel and the subsequent military strike on the Gaza Strip.

Mera Yuva Bharat

- **Context:** The Union Cabinet has granted approval for the establishment of "Mera Yuva

Bharat" (MY Bharat).

- MY Bharat, an autonomous body will benefit youth in the age group of 15-29 years, in line with the definition of 'Youth' in National Youth Policy.
- The primary objective of MY Bharat is to serve as a comprehensive platform for youth development across the government.
- It is set to be dedicated to the nation, in honour of Sardar

Vallabhbhai Patel's birth anniversary.

- This platform will function as a one-stop solution for engaging with youth and promoting initiatives designed to benefit them.

Urban Local Bodies: ASICS 2023 report

- **Context:** The sixth edition of the Annual Survey of India's

City-Systems (ASICS) 2023 report has been released by Janaagraha.

ASICS

- The Annual Survey of India's City-Systems (ASICS) is a comprehensive evaluation of the quality of governance in Indian cities. It was published after a gap of five years (the last was in 2017). The ASICS report this

time focused on the state as a unit instead of ranking cities as they did in the past

About Janaagraha

- Janaagraha Centre for Citizenship and Democracy (HQ: Bengaluru; founded in 2001) is a non-profit trust, working towards the mission of transforming the quality of life in India's cities and towns

Key highlights of the Report:

Key Insights	Highlights
Purpose of the Report	A nationwide analysis of local governance in Indian cities from a citizen-centric perspective. ASICS focuses on four key components (as shown in Diagram):
Pace of Urbanization	Outlays to the Ministry of Housing and Urban Affairs have increased significantly, but urbanization is outpacing reform efforts, leading to persistent quality-of-life challenges.
Urban Legislations	51% of states/union territories lack accessible urban legislation in the public domain.
Master Plans	39% of India's capital cities do not have an active master plan.
Regional Variations	Eastern states have better urban legislation, followed by Southern states.
Urban Planning Performance	Highly urbanized and large states perform better in urban planning.

Other Recommendations for Urban Local Bodies (other than those mentioned in the Report)

Measures	Key Points
Making ULBs Financially Independent	Fiscal decentralization is crucial for the financial independence of Urban Local Bodies (ULBs).
Strengthening Municipal Revenue	Using tools like GIS and digitization to enhance property tax administration, with the support of State Property Tax Boards (recommended by 12th and 13 FC respectively) The 14th FC recommended that municipalities be enabled to levy vacant land tax
Better Financial Database	Maintenance and audit of accounts at the local level are essential for accessing performance grants.

Automated Permanent Academic Account Registry or 'APAAR' card

- **Context:** The Union Education Ministry has introduced the concept of 'One Nation, One Student ID,' referred to as APAAR ID, in alignment with the National Education Policy (NEP) 2020.
- The APAAR ID, which stands for 'Automated Permanent Academic Account Registry,' is a digital identification system for students in India.

Highlights:

- The APAAR ID is an education ecosystem registry system known as 'EduLocker' for students across all states in India.
- It will digitally store academic qualifications, credit scores, certificates, and other academic data for students from pre-primary to higher education.
- To enrol in the APAAR ID system, students must obtain their parent's consent, and the states have been directed to initiate this process.
- The unique 12-digit APAAR ID will be used for admissions and other academic activities, making it convenient for students.
- Both new and existing users can register or log in using their mobile number, Aadhar Card, or ID and password.
- This initiative aims to create a unified educational system, enhance security, and make

academic data easily accessible for students.



Reversible Inhibition of Sperm Under Guidance or RISUG

- **Context:** The Indian Council of Medical Research (ICMR) has successfully tested a long-lasting male contraceptive called "Reversible Inhibition of Sperm Under Guidance" (RISUG).

About RISUG:

- RISUG is a non-hormonal injectable male contraceptive that blocks the production of sperm by creating a physical barrier in the vas deferens, the tube that carries sperm.
- It begins to work within two months of injection and remains effective for up to a decade.
- The overall efficacy of RISUG in achieving azoospermia (absence of sperm) was 97.3%, and it was 99.02% effective in preventing pregnancy without any serious side effects.
- This breakthrough in male contraception offers a safe, effective, and long-lasting option for family planning.

INS Imphal

- **Context:** INS Imphal, India's third indigenous stealth destroyer of the Project 15B class, was delivered to the Indian Navy four months ahead of schedule by Mazagon Dock Shipbuilders Limited.

Features:

- It's the first warship with accommodation for women officers and sailors, can carry 312 crew, has a 4,000 nautical mile range, and is armed with Brahmos missiles, Barak-8 missiles, and anti-submarine weapons. This class of destroyers is more versatile than previous ones and capable of various maritime missions.



Operation Chakra-2

- **Context:** The Central Bureau of Investigation (CBI) carried out a widespread crackdown on cyber criminals in India in an operation known as 'Operation Chakra-2.'
- This operation involved searches at 76 locations across the country and was prompted by the registration of five separate cases of cyber-enabled financial fraud, including a Rs. 100-crore cryptocurrency scam.



- The fraud scheme posed as a fake crypto mining operation

and targeted unsuspecting Indian citizens. The cases were registered based on information provided by the Financial Intelligence Unit (FIU).

- The agency is collaborating with various international law enforcement agencies, includ-

ing the FBI, INTERPOL, and others, to follow up on leads.

- 'Operation Chakra-1' was conducted nearly a year ago in collaboration with Interpol, the FBI, and police forces from various countries, involving searches at 115 locations.

VII. Welfare Oriented Schemes and their Utility (Central & State Government)

Andhra Pradesh: New Guaranteed Pension Scheme (GPS)

- **Context:** The Andhra Pradesh Guaranteed Pension System Bill, 2023 was passed recently.
- Through this, the Andhra Pradesh government started introducing the New Guaranteed Pension Scheme (GPS) against the criticism of the New Pension Scheme (NPS) and the negative fiscal impact Old Pension Scheme (OPS)

Bima Vahak

- **Context:** The Insurance Regulatory and Development Authority of India (IRDAI) has announced that the guidelines for the women-centric insurance distribution channel called "Bima Vahak" will become effective upon the launch of "Bima Vistaar," an all-in-one standard insurance product currently under development.
- The primary objective of Bima Vahak is to establish a dedicated distribution channel

focused on enhancing insurance inclusion and awareness in every village/gram panchayat, thereby increasing the accessibility and availability of insurance throughout the country.

- IRDAI stands for the Insurance Regulatory and Development Authority of India. It was established on April 19, 2000 to regulate the insurance industry in India.

IRDAI's responsibilities include:

- Regulating and licensing the insurance and re-insurance industries in India
- Protecting the interests of policyholders
- Promoting the orderly growth of the insurance industry in India

Kerala: "Back to school" program

- Kerala is launching a "back to school" program for 46 lakh women enrolled in the Kudumbashree poverty

alleviation mission. Over the next two months, more than 2,000 schools will open on weekends to provide training on adapting to the digital age.

- The program aims to empower women, enhance household incomes, and strengthen the mission's functioning.
- Classes will cover topics like organizational strength, community life security, and digital age skills.
- **Usage:** The example can be used in Indian society/ Social Justice/ Governance/Women-related questions on the Empowerment of Women.

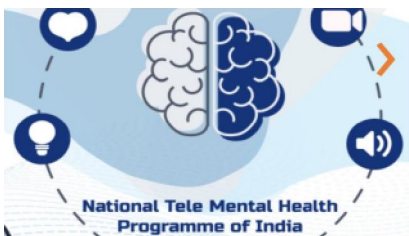


Tele-MANAS

- **Context:** India's Tele-MANAS, a round-the-clock mental health helpline launched on World

Mental Health Day in 2022, has received over 3,40,000 calls from 32 states and union territories.

- The helpline was initiated in response to the increased mental health challenges brought about by the COVID-19 pandemic, providing essential mental health first-aid support.
- Tele-MANAS is a mental health helpline in India. It was launched in October 2022 by the Ministry of Health & Family Welfare. The program's objectives are:
 - To enable people to seek support for their mental health issues while maintaining anonymity
 - To facilitate timely referral for specialist care and follow-up
 - To enhance mental health-care capacity and networking
- Tele-MANAS offers 24/7 mental health care services in every Indian state, in regional languages. The service is accessible through the toll-free numbers 14416 or 1-800-891-4416.



'A-HELP' program

- **Context:** The Department of Animal Husbandry and Dairying, Government of India,
- The protocol was launched by the Union Minister for Women and Child Development.

introduced the 'A-HELP' (Accredited Agent for Health and Extension of Livestock Production) program in the state of Jharkhand.

- This program aims to empower women by engaging them as Accredited Agents who play a vital role in disease control, animal tagging, and livestock insurance.
- The 'A-HELP' initiative is being implemented in various Indian states and union territories, including Bihar, Gujarat, Jammu and Kashmir, Karnataka, Madhya Pradesh, Uttarakhand, and Jharkhand, through an MoU between the Department of Animal Husbandry and Dairying and the National Rural Livelihoods Mission.



Protocol for Management of Malnutrition in Children

- **Context:** The Indian government has introduced a national protocol called the 'Protocol for Management of Malnutrition in Children' aimed at identifying and providing comprehensive care for malnourished children in the country.
- The protocol was launched by the Union Minister for Women and Child Development.

Features:

- It outlines a 10-step process for identifying and managing malnutrition in children at the Anganwadi level, incorporating aspects such as growth monitoring, appetite testing, nutritional management, and follow-up care.
- The protocol also introduces innovative approaches, such as the "Buddy mother" concept, where a mother with a healthy child guides the mother of a malnourished child at an Anganwadi centre.
- This initiative is part of the government's efforts to combat malnutrition through the 'Poshan Abhiyan,' with a focus on treating malnourished children and promoting their healthy growth.

UNICEF's Passport to Earning (P2E) Initiative

- **Context:** UNICEF's Passport to Earning (P2E) Initiative has achieved a significant milestone by certifying over one million young people in India in the areas of financial literacy and digital productivity.

About the initiative:

- P2E is an e-learning solution, launched in 2022, by UNICEF India, YuWaah and partners. This initiative aligns with the National Education Policy and provides free access to certificate courses in relevant skills. It aims to empower 5 million youth between the ages of

14-29 with skills (by 2024) and connect them to job and self-employment opportunities to achieve financial independence.

- 62 per cent of all young learners who benefitted from P2E courses in India are adolescent girls and young women.
- It was celebrated during an event on the UN International Day of the Girl Child (11th October)
- **Usage:** The example can be used in Economy (Skill Development)/ Social Justice etc.

'Makhir' ginger

- **Context:** Trinity Saioo, the 2021 Padma Shri winner known as the "Turmeric Trinity," who was recognized for her work in promoting Lakadong turmeric cultivation in Meghalaya, is now focusing on promoting the unique "Makhir" ginger of the state.
- Makhir ginger is known for its distinct pungency and medicinal properties.
- Meghalaya is home to two popular types of ginger, Makhir

and Nadia, both known for their health benefits despite their small size.

About Lakadong turmeric:

- Under the "One District One Product" scheme, Lakadong turmeric gained recognition in the West Jaintia Hills district.
- It is distinguished by its high curcumin levels and antioxidant properties.

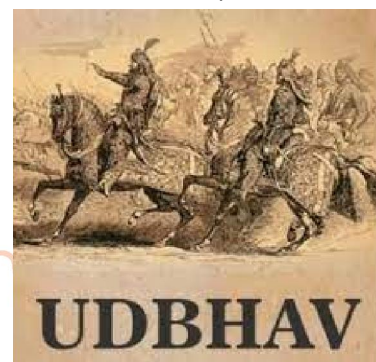


Project Udbhav

- **Context:** 'Project Udbhav' has been launched by the Indian Defence Minister, aiming to integrate ancient Indian strategic wisdom into modern military pedagogy.
- The project, in collaboration with the United Service Institution of India (USI), seeks to create an indigenous strategic vocabulary based on India's philosophy and culture.

About the project:

- The project will explore under-explored strategic thinking, statecraft, and warfare from classical texts and enrich military training curricula like Chanakya's Arthashastra (strategic partnerships, diplomacy, soft power projections, etc.) and Thirukkural (Ethical conduct in warfare).



- It will focus on educating military leaders, informing senior commanders, and creating a knowledge pool for scholars and defence personnel.
- Ancient Indian texts and historical military campaigns and leaders will be studied to connect traditional knowledge with contemporary military practices.

VIII. Geography - Geographical Marks

Pink Bollworm (PBW)

- **Context:** The Pink Bollworm (PBW) is causing significant damage to cotton fields in northern Rajasthan, Haryana, and Southwestern Punjab, with the infestation being more

widespread and serious than before.

- Farmers have been using Bt cotton seeds, which have lost their effectiveness against the PBW.
- The situation has led to a

drastic reduction in cotton yields, making it financially unviable for many farmers.

- The pink bollworm (*Pectinophora gossypiella*) is an insect that is a pest in cotton farming.
- It is native to Asia but has

become an invasive species in most cotton-growing countries around the world. It is considered possibly the most destructive pest on cotton worldwide.

Yarkovsky Effect

- **Context:** NASA's OSIRIS-REx mission successfully collected a sample from asteroid Bennu and is now on an extended mission to study Apophis. The mission was significant for understanding the early solar system, potential asteroid impacts, and the Yarkovsky effect on asteroids.

Yarkovsky effect

- The Yarkovsky effect is a phenomenon in space where the way an asteroid absorbs and re-emits solar radiation can alter its trajectory over time. This effect can lead to small but significant changes in an asteroid's path, potentially influencing its orbit and posing collision risks with Earth.
- **Usage:** Scientists study the Yarkovsky effect to better understand and predict the movements of asteroids in our solar system.

Pontus plate

- **Context:** Scientists have recently rediscovered the "Pontus plate," a long-lost tectonic plate that disappeared about 20 million years ago.
- This plate was approximately a quarter the size of the Pacific Ocean and once existed

beneath an ancient ocean known as the Pontus Ocean.

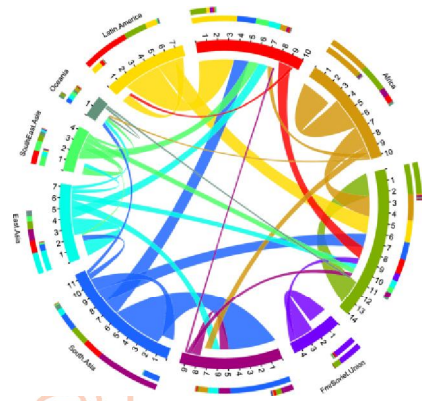
- The rediscovery of the Pontus plate was accidental, occurring during a study of rocks in Borneo. Researchers had originally been studying the Pacific plate when they came across rock fragments that didn't fit with known plates' magnetic properties.
- Computer modelling eventually revealed that these rock fragments belonged to a previously unknown tectonic plate, the Pontus plate.
- This plate formed at least 160 million years ago, possibly even earlier, and eventually disappeared as it was subducted beneath the Australian and Chinese plates. This discovery sheds light on Earth's geological history and the movement of tectonic plates.

Circular migration

- **Context:** Circular migration involves people moving to and from a destination country based on employment availability, rather than migrating permanently or temporarily.
- Circular migration gained popularity in the 1960s and 1970s due to globalization, improved transportation, and social networks.
- To be considered a circular migrant, certain criteria must be met, including temporary residence in the destination, multiple entries into the destination country, freedom of movement,

legal right to stay, protection of migrants' rights, and demand for temporary labour.

- This type of migration is now viewed as a balanced approach that benefits both sending and receiving countries.



- For sending countries, it can boost the domestic economy through remittances, foreign capital, and improved infrastructure. However, it can also lead to brain drain as talented individuals may seek opportunities elsewhere.
- For receiving countries, circular migration can help fill low-income, low-skill job gaps and mitigate concerns related to population growth. It promotes brain circulation, where individuals contribute to both countries' development.
- In India, internal migration has often been circular, particularly from rural to urban areas, driven by industrialization and job opportunities in the manufacturing, construction, and services sectors. Inter-state migration is prevalent, with states like West Bengal, Odisha, and Bihar experiencing high out-migration rates. Circular migrants

benefit from better-paying jobs, remittances, and improved household welfare. However, they may face challenges, such as exploitation, language barriers, and seasonal job insecurity.

Turmeric Board

- **Context:** The Indian government has officially established the National Turmeric Board, responding to a longstanding demand from turmeric farmers across the country.
- The board, under the Union Commerce Ministry, will be dedicated to the development and growth of turmeric and turmeric-related products in India.
- India is a leading producer and exporter of turmeric in the world.
- The largest producing states of Turmeric are Maharashtra, Telangana, Karnataka and Tamil Nadu. India has more than 62% share of world trade in turmeric
- Turmeric is a spice that comes from the root of the *Curcuma longa* plant. It's a relative of ginger and has been used in cooking for hundreds of years.
- Turmeric is a deep, golden-orange colour and has a warm, bitter taste. It's often used to flavour or colour: Curry powders, Mustards, Butters, Cheeses.
- Turmeric contains a chemical called curcumin, which might reduce swelling. Curcumin also gives turmeric its yellow colour.

Palm oil

- **Context:** The Indian government aims to triple palm oil production by 2030 as part of the national oil palm mission.
- This initiative is in response to the projected increase in domestic edible oil consumption from 24 million tonnes to 30 million tonnes by 2030.
- Despite these efforts, India's import dependence on edible oils is expected to continue due to rising consumption.
- Currently, India imports around 14 million tonnes of edible oil, which is likely to reach a record 17 million tonnes in the current oil year due to falling global prices.



- Major oil palm-growing states in India include Andhra Pradesh, Telangana, and Kerala, which account for 98% of total production.
- Palm oil is an edible vegetable oil that comes from the fruit of the oil palm tree. It's the most widely used vegetable oil in the world and is found in about 60% of all packaged products in supermarkets.
- Palm oil is used in Food manufacturing, Beauty products, Biofuel, and Cookies.

- There are two types of palm oil:
- Crude palm oil: Comes from squeezing the fleshy fruit
- Palm kernel oil: Comes from crushing the kernel, or the stone in the middle of the fruit

Zealandia (World's Eighth Continent)

- **Context:** Recent research on Zealandia, an underwater continent to the southeast of Australia, is shedding light on its geological history and why it remained hidden for so long.
- Recently, an international team released highly detailed maps of Zealandia, covering its entire five million square kilometres.

Zealandia

- Zealandia is an underwater continent located to the southeast of Australia. It was recognized as Earth's eighth continent in 2017. Zealandia formed around 83 million years ago during the Late Cretaceous period and started as part of the supercontinent Gondwana before breaking away.
- The existence of Zealandia was first recorded in 1642 by Dutch businessman and sailor Abel Tasman.

How was Zealandia formed

- Gondwana formed when Earth's ancient supercontinent, Pangea, split into two fragments.
 - Laurasia in the north became

- Europe, Asia, and North America.
- o Gondwanain the south dispersed to form modern-day Africa, India, Antarctica, South America, and Australia.
- Zealandia began as part of the supercontinent Gondwana, which started breaking apart. As Zealandia began to break away from Gondwana, "The Giant Volcanic Region" formed – where magma flooded out of cracks. Zealandia separated from the landmasses to its north and south, eventually becoming its own continent. Over millions of years, it underwent stretching and thinning due to tectonic forces, creating ruptures that later formed oceanic crust. Around 25 million years ago, Zealandia largely sank beneath the ocean, becoming the submerged continent we know today.

PUSA-44 paddy variety

- **Context:** The Punjab Chief Minister has announced a ban on the cultivation of the PUSA-44 paddy variety starting next year.
- PUSA-44 was developed in 1993 and gained immense popularity among Punjab's farmers, covering 70 to 80 per cent of the state's paddy cultivation area due to its high yield.



Evidence in support of Zealandia as a continent:

Evidence	Explanation
Bathymetry	Zealandia's seabed is considerably shallower compared to the surrounding oceanic plates, indicating it's underlain by a continental rather than an oceanic crust.
Geological Composition	Analysis of rocks and sediments from Zealandia reveals continental characteristics, not typical of oceanic crust.
Tectonic Separation	Zealandia separated from the Gondwana supercontinent and moved independently, forming its distinct landmass
Geological Fit	Geological features of Zealandia align with West Antarctica, suggesting that these regions were once connected as part of a larger continent
Magnetic Anomalies	Measurements of magnetic anomalies in the ocean floor around Zealandia provide insights into its stretching and thinning processes over millions of years
Size	While mostly submerged, Zealandia covers an extensive area of approximately five million square kilometres, meeting the size criterion for continent status

The reasons behind the ban on PUSA-44:

- **Extended Maturity Period:** PUSA-44 has a longer maturity period, requiring around 160 days to mature, which is approximately 35 to 40 days longer than other paddy varieties.
- **Water Conservation:** Punjab faces severe groundwater depletion, and the government aims to conserve one month of irrigation water by banning PUSA-44.
- **Stubble Burning:** PUSA-44 exacerbates the problem of stubble burning in Punjab. Its harvesting just before the ideal time for wheat sowing (typically at the end of October) leaves a limited timeframe of 20 to 25 days for stubble disposal before wheat sowing.

Ken-Betwa River linking

- **Context:** The Ken-Betwa Link

Project (KBLP), a major irrigation project in India, has recently secured its final forest clearance after six years.

- The Ken-Betwa Link Project (KBLP) is a river interlinking project that aims to transfer surplus water from the Ken River in Madhya Pradesh (MP) to Betwa in Uttar Pradesh (UP). The project is the first under the National Perspective Plan for the interlinking of rivers.
- The KBLP aims to irrigate the drought-prone Bundelkhand region. The dam will be built within Panna Tiger Reserve and will generate 103 MW of hydroelectric power.



Dangers of Large Dams in India

- **Context:** The article highlights the dangers of large dams in India, especially in the Himalayas. It discusses the recent collapse of the Chungthang dam in Sikkim due to the eruption of South Lhonak Lake.

Status of Dam in India:

- India is the 3rd largest dam-owning nation in the world. There are around 5,700 large dams in the country, of which about 80% are over 25 years old.

Benefits of dams

- Generation of hydroelectric power– Dams provide hydro-power, which contributes 12% to India's total energy
- Irrigation– Between 1950-2000, dams contributed to 35% of the total irrigated land, and increased food grain production by 25%.
- Provision of water to households and industries– The regulated flow of water dilutes harmful dissolved substances in river waters during lean periods by supplementing low inflows and maintaining the quality of water within safe limits.
 - Ex- Tansa dam supplies water to Mumbai city.
- Drought mitigation– dams store water that can be used when rainfall is below normal limits. Ex- Sardar Sarovar dam in Gujrat.
- Flood prevention– dams check the flow of water and prevent flooding in low-lying areas, protecting lives and property.
- Inland navigation– provide navigation channels throughout the year, due to controlled levels of water.
- Recreation– dams offer recreational activities such as boating, fishing and swimming.

New evolutionary law

- **Context:** Scientists have proposed a new evolutionary law that can explain the evolution of both living and non-living

entities, including minerals and stars.

- This law suggests that natural systems, whether living or non-living, evolve towards greater patterning, diversity, and complexity.

About New Evolutionary Law:

- As life evolved from single-celled to multi-celled organisms, Earth's minerals became more complex, contributing to diversity. The interaction between biodiversity and mineral diversity played a role in shaping life as it exists today.
- It identifies three kinds of functions in nature: stability (systems with stable arrangements survive), dynamic systems with an energy supply, and novelty (exploration of new configurations or arrangements leading to new behaviours or characteristics).
- This law has implications for various complex evolving systems, from astrophysics to ecology and artificial intelligence, and scientists aim to apply it to diverse domains of science.
- The study showcases the importance of interdisciplinary collaboration, including input from philosophers of science in shaping these ideas.

Regional Rapid Transit System (RTTS)

- **Context:** The Prime Minister inaugurated the first leg of the Regional Rapid Transit System (RTTS), India's first dedicated

mass rapid transit system for regional connectivity called as Namo Bharat Train.

- The RRTS is designed to operate at speeds of up to 180 km/hour and is expected to reduce the travel time between Delhi and Meerut to less than an hour.

About RRTS:

- RRTS is a new rail-based, semi-high-speed, high-frequency commuter transit system with a design speed of 180 Kmph for better connectivity.

Key Features:

- The RRTS is an integrated, mass transit network aimed at promoting balanced and sustainable urban development in the National Capital Region (NCR).

- **Implementing Authority:** The National Capital Region Transport Corporation (NCRTC), a joint venture between the central government and the state governments of Delhi, Haryana, Rajasthan, and Uttar Pradesh, is responsible for implementing the RRTS project across the NCR.



Tilapia parvovirus

- **Context:** India has reported the presence of tilapia parvovirus (TiPV) for the first time in Tamil Nadu., affecting farm-bred tilapia fish.

- The virus caused mortality rates ranging from 30% to 50% in farms and 100% in laboratory settings.



- Tilapia, considered a "poor man's fish," was introduced to Indian freshwater bodies in the 1950s.
- While Nile tilapia, introduced in the 1970s, is larger and widely cultivated, the occurrence of TiPV is a concern for tilapia farming in India.
- Research is ongoing to develop a vaccine to combat TiPV and mitigate losses for fish farmers.

IX. Environment

Apple's 'Mother Nature' campaign

- **Context:** The article discusses Apple's 'Mother Nature' campaign and its environmental efforts,

Apple's 'Mother Nature' campaign

- Apple's 'Mother Nature' campaign is an environmental initiative launched by Apple, showcasing the company's commitment to sustainability and environmental responsibility.

Examples:

- **Recycling Program:** Since

1994, Apple has run a gadget-recycling program, incentivizing customers to trade in their old devices for new ones.

- **Positive Environmental Impact:** Apple's buyback policy, recycling initiatives, and responsible sourcing of materials place it ahead of its competitors in terms of environmental responsibility.
- Despite its efforts, Apple has faced criticism for practices like "planned obsolescence" with its smartphones, and allegations of environmental transgressions (linked to

pollution from Chinese component manufacturing facilities).

- **Usage:** The Campaign can be used in Environment/ Corporate Social Responsibility Related Questions.

UN Bonn summit

- **Context:** Delegates at a UN conference in Bonn have adopted a new global framework aimed at reducing environmental risks associated with chemicals and waste.
- This framework, known as the Global Framework on Chemicals, includes 28 targets designed to enhance responsible

management of chemicals and waste throughout their life-cycle.

- The Bonn Declaration was adopted at the summit, aiming to prevent exposure to harmful chemicals, phase out the most dangerous ones when appropriate, and enhance the safe management of such chemicals where necessary.
- The declaration also encourages countries to support the transition to circular economies and develop substitutes for harmful chemicals to safeguard health, and the environment, reduce waste, and promote recycling efforts.

AI-Based System Enhances Elephant Safety on Rail Tracks

- Tamil Nadu is close to completing its first artificial intelligence (AI)-based early warning system designed to protect wild elephants from train collisions along the Ettimadai–Walayar railway section. This initiative involves the installation of 12 e-surveillance towers equipped with thermal imaging cameras to monitor elephant movements. Once fully functional, the system will alert forest department staff and railway authorities to reduce train speed, enhancing elephant safety in the region.

Operation “Kachchhap”

- **Context:** The Directorate of Revenue Intelligence (DRI) conducted a successful operation called “Kachchhap,”.
- This operation resulted in the recovery of the 955 live baby turtles, including species like the Indian Tent Turtle, Indian Flapshell Turtle, Crown River Turtle, Black Spotted/Pond Turtle, and Brown Roofed Turtle.
- The DRI had received intelligence about a syndicate engaged in the illegal trafficking and trading of these turtles, some of which are considered vulnerable or near-threatened species according to the IUCN Red List and are protected under the Wildlife (Protection) Act, 1972.
- This operation is part of the DRI’s ongoing efforts to protect the environment and combat illegal wildlife trafficking.



Hirakund Wetland

- **Context:** A study has revealed high levels of cancer-causing heavy metals, including lead and chromium, in eight wetlands in Odisha, with Hirakud being one of them.
- These heavy metals, which result from human activities such as urbanization, industri-

Previous Measures:

Measure	Description
Coordination Committee	The Union Environment Ministry set up a permanent coordination committee involving the Ministry of Railways and the Environment Ministry to prevent elephant deaths on railway tracks
Eco Bridges (Wildlife Corridors)	These are wildlife corridors, also known as wildlife crossings, which connect two larger areas of similar wildlife habitat, allowing animals to move safely.
MIKE Program	The “Monitoring the Illegal Killing of Elephants (MIKE)” program was launched in 2003 to combat illegal elephant poaching and trade.
Seed Bombs for Elephant Food Enrichment	Odisha’s Athagarh Forest Division has initiated the practice of casting seed balls (or bombs) in reserve forest areas to enrich food stock for wild elephants and mitigate human-elephant conflicts.
Right of Passage for Elephants	The Supreme Court upheld the 2011 Madras High Court order regarding the Nilgiris elephant corridor, affirming the animals’ right of passage and mandating the closure of resorts in the area.

alization, and agriculture, can enter crops through the soil and subsequently be consumed by humans.

- The study also noted that the surrounding community indirectly consumes water from these wetlands by consuming foods like fish, rice, vegetables, and spinach grown in them.



Hirakud Reservoir (Ramsar Site)

- It is the largest earthen dam in Odisha and started operating in 1957. Out of the known 54 species of fish from the

reservoir, one has been classed as being endangered, six near threatened and 21 fish species of economic importance. It also provides important hydrological services by moderating floods in the Mahanadi Delta, the ecological and socio-economic hub of the east coast of India.

Sikkim: Glacial lake outburst flood (GLOF)

- **Context:** Fourteen people have died, and 102, including 23 Army personnel, are missing in Sikkim after the burst of the South Lhonak Lake, a glacial lake in North Sikkim, due to heavy rains.
- The released water created flash floods in four districts, including Mangan, Gangtok, Pakyong, and Namchi, through the Teesta River.

Glaciers

- Glaciers cover 10% of the Earth's land surface, but they are shrinking rapidly across most parts of the world, leading to cascading impacts on downstream systems.

Glacial Lake outburst flood (GLOF)

- Retreating glaciers, like several in the Himalayas, usually result in the formation of lakes at their tips, called proglacial lakes, often bound only by sediments and boulders.
- If the boundaries of these lakes are breached, it can lead to large amounts of water rushing down, the way by picking up sediments, rocks, and other materials. A majority of the glaciers in the Himalayas are known to be receding, all leading to the formation of several glacial lakes.

Reasons behind GLOF and its increased frequency:

Reasons	Description
Glacial Retreat	Melting glaciers contribute to glacial lake formation. As glaciers shrink, they release meltwater, which fills these lakes. If the lake's boundary is breached, it can lead to a GLOF.
Moraine Formation	Moraines, piles of debris carried by glaciers, can act as natural barriers. When these moraines dam glacial lakes, they become susceptible to breaching, causing GLOFs.
Landslides and Ice Avalanches	Landslides or ice avalanches can fall directly into glacial lakes, displacing water and causing it to breach natural dams, resulting in GLOFs.
Meteorological Conditions	Weather patterns, including sudden temperature changes or extreme storms, can influence the stability of glacial lakes and trigger GLOFs.

Climate Change Impact	The Himalayan-Hindukush region is a climate change hotspot. Accelerated glacier melt leads to the formation of glacial lakes. Also, Climate change increases the frequency and intensity of cloudbursts.
Geological Triggers	Earthquakes or other geological events can destabilize moraines, leading to the sudden release of water from glacial lakes.
Developmental Changes	Modern infrastructure, including dams and roads, alters the landscape. Large dam projects intensify geological stresses, weakening rocks.

Coral Reef Breakthrough

- **Context:** The International Coral Reef Initiative (ICRI), in collaboration with the Global Fund for Coral Reefs (GFCR) and the High-Level Climate Champions (HLCC), has launched the Coral Reef Breakthrough.
- This initiative aims to safeguard at least 125,000 square kilometres of shallow-water tropical coral reefs by 2030 through investments of at least US\$12 billion.
- The Coral Reef Breakthrough will focus on four action points:
 - Mitigating local drivers of loss, including land-based pollution, coastal development, and overfishing.
 - Doubling the area of coral reefs under effective protection by aligning with global coastal protection targets.
 - Accelerating restoration efforts to impact 30% of degraded reefs by 2030.
 - Securing investments of at least USD 12 billion by 2030 from public and private sources to conserve and restore coral ecosystems.
- Coral reefs are underwater

ecosystems made up of colonies of tiny corals called polyps. These marine invertebrates have hard exoskeletons made of calcium carbonate. They are sessile, meaning they are permanently fixed in one place.

- Coral reefs are massive structures made of limestone deposited by coral polyps. They are sometimes called the "rainforests of the sea" because they support approximately 25 per cent of all known marine species.



Olive Ridley

- **Context:** Two Olive Ridley turtles, fitted with satellite transmitters, have embarked on remarkable journeys in search of food after laying eggs on Sindhudurg district beaches in Maharashtra.
- One has covered an impressive 5,000 kilometres from the Arabian Sea to the Bay of Bengal. And the fellow turtle with a

transmitter, is currently north of the Malabar coast.

- Olive ridley turtles are one of the smallest sea turtle species. They are named for the olive green colour of their heart-shaped shells. They are found primarily in the tropical regions of the Pacific, Indian, and Atlantic oceans.



Protection Status:

- Wildlife Protection Act, 1972: Schedule 1
- IUCN Red List: Vulnerable
- CITES: Appendix I

Nanozyme can degrade pollutants in wastewater

- **Context:** Researchers at the Indian Institute of Science (IISc) have developed a novel enzyme mimic called NanoPtA, with significant potential applications in wastewater treatment and healthcare.
- In this study, the IISc team synthesized NanoPtA, a platinum-

containing nanozyme that can be converted into a powder for industrial use.

- NanoPtA exhibits the ability to degrade toxic chemicals in industrial wastewater effectively when exposed to sunlight.
- When NanoPtA comes into contact with wastewater, it forms tape-like structures through non-covalent interactions between benzene rings and long alkyl chains in the molecules. These structures emit light, which enables them to oxidize pollutants in the presence of sunlight, reducing wastewater toxicity.
- The researchers found that NanoPtA could rapidly degrade common pollutants like phenols and dyes, even at low concentrations, within ten minutes under sunlight.
- Beyond wastewater treatment, scientists believe that NanoPtA has potential applications in healthcare. It could serve as a valuable diagnostic tool for neurological and neurodegenerative diseases, showcasing its versatility and significance in multiple fields.

About Nanozymes:

- They are nanomaterials that possess enzyme-like properties. Unlike natural enzymes, which are typically proteins, nanozymes are typically made of inorganic materials such as nanoparticles. These nanostructures can catalyze chemical reactions in a manner similar to enzymes

Carbon accounting framework

- **Context:** There is a rising need for a comprehensive carbon accounting system to address the interconnected and multi-faceted challenges of climate change, referred to as the climate "polycrisis."
- Instead of addressing climate issues sector by sector, they propose a profound transformation, akin to building a "carbon infrastructure."
- This carbon infrastructure would involve accounting for carbon flows at every level, from households and local communities to districts, states, and the entire country.

Suggestions:

- Creating a carbon accounting system similar to financial balance sheets, capable of tracking carbon emissions from individuals to the entire nation.
- This would allow for the internalization of carbon reduction goals and the potential implementation of carbon taxes alongside income taxes.
- The need for tracking carbon inflows and outflows at a granular level, making carbon visible and enabling progressive carbon taxes.
- A national carbon accounting system would require businesses and individuals to report their carbon activities, making the circulation of carbon transparent. This transparency would enable the financing of goods and services using

carbon surpluses and setting targets for emission reductions.

Dandeli forest

- **Context:** The Dandeli forest in Karnataka, India, renowned for its unique grasses, bird species, and cattle herders, is facing a climate crisis due to rising temperatures and shifting rainfall patterns.

Concerns:

- Loss of Grasses
- Eupatorium Weed
- Changing Forest Character
- Uncontrolled Forest Fires
- Decline in Herbivore Pop
- Impact on Villagers
- Changes in Fruit Availability
- Decline in Honey Collection

About Dandeli Wildlife Sanctuary:

- It lies within the Kali Tiger Reserve (KTR) (Uttara Kannada District of Karnataka) along with Anshi National Park.
- KTR is a UNESCO World Heritage Site and global biodiversity hotspot. The reserve derives its name from the Kali River, which flows through the region. The ecoregions found here, namely the North Western Ghats montane rainforests and North Western Ghats moist deciduous forests.



National framework for climate services

- **Context:** India is launching its first national-level framework for climate services, known as the National Framework for Climate Services (NFCS), led by the India Meteorological Department (IMD).
- The NFCS aims to provide climate information and services to various sectors, including agriculture, energy, disaster management, health, and water, to help them make informed decisions and mitigate climate risks.
- The NFCS is based on the Global Framework for Climate Services (GFCS), which focuses on generating high-quality climate data and information, with priority sectors including agriculture, energy, health, water, and disaster risk reduction.
- The need for NFCS arises from the gaps in weather and climate data across India, particularly in the Himalayan regions and oceans, limiting the IMD's ability to make long-term climate predictions.

Benefits:

- The NFCS aims to strengthen the observational network, improve data collection, and run weather and climate models to provide tailored climate data and information.
- This information will support preparations for new climate conditions and adaptation to their impacts on various as-

pects of society, such as water supplies, health, agriculture, infrastructure, and energy generation.

- Countries like Switzerland, China, Germany, and the United Kingdom have already launched their NFCS, while several others are in the advanced stages of implementation.

Biohydrogen and India's green hydrogen pathway

- **Context:** The article discusses the role of biohydrogen in India's green hydrogen pathway. It also discusses the industrial interest in biogas reforming, which converts biogas into environmentally friendly chemicals like syngas or biohydrogen.

Biohydrogen as a Promising Solution:

Carbon Capture	The biohydrogen process inherently captures carbon from biogas, contributing to carbon-neutral or even carbon-negative outcomes. Biogas reforming can help reduce carbon deposition through the use of excess steam
Infrastructure Compatibility	Biohydrogen production methods can be integrated with existing natural gas infrastructure, minimizing the need for new infrastructure development.
Research and Development	Attracts significant research interest and investment, driving innovation in the field of biohydrogen production.

India's status for Green Hydrogen:

- Oil India Limited (OIL) recently commissioned India's first 99% pure green hydrogen plant in eastern Assam's Jorhat
- NTPC (in Kawas, Surat) has started India's 1st Green Hydrogen Blending operation in the Piped Natural gas (PNG) Network.

The key difference between biohydrogen and green hydrogen is in their sources of production:

- **Biohydrogen:** Derived from biological sources such as biogas, and often considered a form of renewable hydrogen due to its environmentally friendly conversion process.
 - Biohydrogen is hydrogen produced from biological sources, typically through biogas reforming. It converts biogas (CH₄ and CO₂) into hydrogen, often referred to as syngas or bio-hydrogen
- **Green Hydrogen:** Produced through the electrolysis of water using renewable energy sources like solar or wind power, and is considered the purest form of clean hydrogen.

- The Petroleum and Natural Gas Regulatory Board (PNGRB) has given approval for a 5% blending of green hydrogen with PNG (later to be scaled to 20%)
- Pune Municipal Corporation (PMC) has collaborated with business management consultant
- The Green Billions (TGBL) to manage its waste and generate it into useable green hydrogen (under the waste-to-hydrogen project)
- Strategic Clean Energy Partnership (SCEP) to mobilise finance and speed up green energy development.

Project Nilgiri Tahr

- **Context:** Tamil Nadu has launched 'Project Nilgiri Tahr,' a wildlife conservation initiative.
- The project aims to protect the endangered Nilgiri Tahr, a species native to the Western Ghats.
- It focuses on understanding the population, distribution, and ecology of Nilgiri Tahr, reintroducing them to their historical habitats, addressing immediate threats to their survival, raising public awareness, and developing eco-tourism activities.



Green Credit Program (GCP) and Ecomark scheme Under LiFE Initiative

- **Context:** The Indian government has introduced two green initiatives in preparation for the upcoming UN Climate Summit, COP 28 – Green Credit Program (GCP) and Ecomark scheme Under LiFE Initiative

Initiative	Description
Green Credit Program (GCP)	<p>A market-based mechanism designed to incentivize voluntary environmental actions across various sectors</p> <p>Initial focus on water conservation and afforestation</p> <p>Indian Council of Forestry Research and Education (ICFRE) is responsible for the implementation, management, monitoring, and operation</p> <p>Individuals and entities earn Green Credits by registering environmentally friendly activities through a dedicated government app/website</p>
Ecomark Scheme	<p>Provides accreditation and labelling for household and consumer products meeting specific environmental criteria while maintaining quality standards</p> <p>Aims to raise consumer awareness of environmental issues, encourage eco-conscious choices, and motivate manufacturers to transition to eco-friendly production</p> <p>Administered by the Central Pollution Control Board in partnership with the Bureau of Indian Standards (BIS)</p>



New toad species

- **Context:** A new species of toad, called *Bufoides bhupathyi*, has been discovered in the Dampa tiger reserve of Mizoram, India.

- This marks the third species in a genus found in the north-eastern region of India.
- The previous two species, *Bufoides meghalayanus* and *Bufoides kempfi*, were found in Meghalaya.
- To resolve taxonomic confusion, field surveys were conducted, leading to the discovery of *Bufoides bhupathyi*, which is distinct from other similar species in terms of interdigital webbing, colouration, skin tuberculation, and the presence of ovoid, tuberculated, and depressed parotid glands.
- The new species is currently known to exist only in the Dampa tiger reserve and is likely to meet the criteria for being assessed as critically endangered according to the International Union for Conservation of Nature (IUCN).
- It has been named after S Bhupathy, a prominent herpetologist who served as the principal scientist at the Salim Ali Centre for Ornithology and Natural History in Coimbatore.

Marine cloud brightening

- **Context:** Australian researchers are exploring the concept of "marine cloud brightening" as a potential solution to mitigate coral bleaching on the Great Barrier Reef caused by extreme heat.
- This approach involves using water cannons to spray seawater into the sky, which results

in the formation of brighter, whiter clouds.

- These clouds, known as low marine clouds, reflect sunlight away from the ocean's surface, offering protection to the marine life beneath and potentially reducing coral bleaching.
- The idea of marine cloud brightening was initiated after the mass coral bleaching event in 2016, with initial lab development and pilot testing near the Great Barrier Reef.
- This method aims to delay coral bleaching during marine heatwaves, potentially buying more time for the reef's recovery.
- To brighten clouds, researchers spray microscopic seawater droplets into the air, mimicking the creation of sea salt aerosols by natural processes like wind and waves.
- Sea salt provides shade and additional reflection of light. While humanity unintentionally brightens clouds through the release of aerosols, the research in Australia aims to harness this process for environmentally responsible and socially acceptable conservation efforts for the Great Barrier Reef.

- **Context:** Estivation, also known as aestivation, is a biological phenomenon in which some animals enter a prolonged state of dormancy or inactivity during hot and dry conditions.
- It serves as a survival strategy to conserve energy and water. Animals undergoing estivation typically seek shelter in cool

underground burrows, crevices, or cocoons, reducing their metabolic activity and energy consumption.



- This behaviour helps them avoid extreme dryness and the risk of predation.
- Examples of estivating animals include the West African lungfish, desert tortoises, and certain land snails.

Microalgae

- **Context:** A study published in the journal *Nature Microbiology* has revealed that microalgae, crucial in the ocean's food chain and carbon capture, have developed a unique strategy to adapt to global warming and declining nutrient levels in the sea.
- As climate change reduces nutrient availability, these microalgae activate a protein called rhodopsin, similar to the protein in the human eye responsible for vision in dim light.
- This light-responsive protein enables microalgae to thrive by using sunlight as an alternative to traditional chlorophyll for growth.
- The study suggests that microbial rhodopsins are significant

light capturers in the ocean, potentially absorbing as much light as chlorophyll-based photosynthesis.

- As global warming leads to nutrient scarcity at the ocean's surface due to reduced mixing between the surface and deeper waters, microalgae struggle to produce food and capture carbon dioxide.
- This mechanism may have

applications in biotechnology for enhancing the activity of light-dependent microbes for various purposes, from insulin production to biofuel.

Himalayan Region: Need for EIA

- **Context:** This article discusses the importance of Environmental Impact Assessment (EIA) with respect to the fragile Himalayan ecosystem

EIA and its evolution

Challenges	Reasons
Recurring Disasters	Recent events like the Teesta dam breach (Sept 2023) in Sikkim and Himachal Pradesh floods and landslides underscore the environmental toll of our development model, particularly in mountainous regions.
"One size fits all" approach	The Himalayan region's unique ecological importance, serving as a water tower and provider of ecosystem services, is not adequately considered in the existing EIA system.
Unsuitability of a graded approach	The differentiated risk management approach used in the regulatory system doesn't account for the special ecological features of the Indian Himalayan Region (IHR).
Unplanned Urbanization	Unplanned construction has disrupted natural water flow, leading to frequent landslides and instability in the Himalayan slopes.
Construction of Dams	The construction of dams without proper environmental impact assessment could submerge arable lands, and biodiversity hotspots, and displace villagers, affecting fisheries and fish ecology.
Ecology under stress	Population growth, industrial and commercial activities, deforestation, soil erosion, and land pressure are stressing the fragile Himalayan ecology.
Vulnerability to extreme conditions	The Himalayas are inherently vulnerable to extreme weather conditions, and seismic activity, and are further impacted by climate change.


About Environment Impact Assessment (EIA) Notification, 2006

- The Environment Impact Assessment (EIA) Notification, 2006, is the governing legal instrument to grant green clearance for the establishment or expansion of an industry on the basis of the expected environmental impact of the project.


Green Energy Corridor (GEC)

- **Context:** The Cabinet Committee on Economic Affairs, has approved the Green Energy Corridor (GEC) Phase-II – Inter-State Transmission System (ISTS) for a 13 GW Renewable Energy Project in Ladakh.





**“எண்ணிய முடிதல்
வேண்டும்
நல்லவை எண்ணல்
வேண்டும்”**



வெற்றியின் முகவரி since 2006

SURESH'
IAS ACADEMY

GEC

Aspect	Details
About	Green Energy Corridor (GEC) is an initiative aimed at integrating and evacuating renewable energy into India's power grid, promoting sustainable growth, and enhancing energy security. It has two phases.
Implementing Agency	Power Grid Corporation of India Limited (POWER-GRID)
GEC-1 Implementation	Already underway in Gujarat, Andhra Pradesh, Karnataka, Himachal Pradesh, Maharashtra, Madhya Pradesh, Tamil Nadu, and Rajasthan, aiming to integrate and evacuate 24GW of Renewable Energy (RE).
GEC-2 Implementation	Planned for seven states: Gujarat, Himachal Pradesh, Karnataka, Kerala, Rajasthan, Tamil Nadu, and Uttar Pradesh. Targeting grid integration and power evacuation of around 20 GW of RE projects over five years (FY 2021-22 to 2025-26). Synchronize renewable energy (wind and solar) with conventional power sources.
Objectives	Achieve 500 GW of installed electricity capacity from non-fossil fuels by 2030 Evacuate 20,000 MW of large-scale renewable power
Significance	Enhance India's long-term energy security; Promote eco-friendly growth by reducing the carbon footprint; Create employment opportunities for both skilled and unskilled workers.

Lemru Elephant Corridor

- **Context:** The Ministry of Coal have excluded certain coal mines from development to protect forest areas, including the Lemru Elephant Corridor.

This is being done as the ministry strives to strike a balance between increasing coal production and preserving the environment.

About Lemru Elephant Reserve:

- The Lemru Elephant Reserve (Hasdeo Aranya forests) in the Korba district of Chhattisgarh, aims to reduce human-elephant conflicts as elephants migrate from Odisha and Jharkhand.
- This biodiverse area, often called the lungs of Chhattisgarh, also contains significant coal deposits.
- The state government notified the reserve (Conservation Reserve) in October 2020 under Section 36A of the Wild Life (Protection) Act, 1972(WLPA).
- In India, elephant reserves and corridors have no legal sanctity under any law, including the Wildlife Protection Act (WLPA), 1972.
- The act mentions only national parks, wildlife sanctuaries, conservation and community reserves (collectively called Protected Areas)



About Hasdeo Forest:

- The Hasdeo forest (spanning over 170 sq km) and is often called the "lungs of Chhattisgarh", is said to be the largest contiguous stretch of dense forestland in central India.

X. Economy - (Economic & Socio Economic Issues)

1. Economic Issues

Multilateral Development Banks (MDBs): Bigger, Better, and Bolder by 2030

- **Context:** The G20 expert group has presented a roadmap (in its report The Triple Agenda: A Roadmap for Better, Bolder and Bigger MDBs) for enhancing the performance of Multilateral

Development Banks (MDBs) to be bigger, better, and bolder by 2030. The group, led by Lawrence Summers (US treasury secretary) and NK Singh (chair of the 15th Finance Commission), has recommended several measures for MDBs.

MDBs

- MDB is a financial institution

established by multiple member countries and falls under international law. E.g., International Monetary Fund, World Bank, Asian Development Bank etc.

- Objectives of MDBs: Stabilizing the global financial system during the time of crisis; Providing long-term financing; Providing lower-cost financing

Role of MDBs in global stability and development

Role of MDBs	Description
Funding Development Projects	ADB's support for the Delhi-Mumbai Industrial Corridor World Bank's assistance in the development of National Waterway 1 on the Ganges River
Crisis Management	World Bank's support for India during the COVID-19 pandemic
Supporting the Implementation of the SDGs	World Bank provided grants to support education and healthcare programs, such as the Sarva Shiksha Abhiyan (Education for All) program and the National Rural Health Mission
Policy Advice and Capacity Building	Providing policy advice and technical assistance for governance and capacity building. IMF's advice on macroeconomic policy for countries like Sri Lanka and Pakistan
Providing Concessional Finance and Grants	Offering concessional finance and grants to LICs and FCS to address development challenges. MDBs' support for low-income countries and fragile states
Promoting Inclusive Growth and Shared Prosperity	Assisting MICs in reducing inequalities and improving access to essential services

- Despite playing a crucial role in promoting development and global stability, multilateral development banks (MDBs) face several challenges that need to be addressed

Anti-money laundering: Sebi releases fresh set of guidelines

- **Context:** The Securities Exchange Board of India (SEBI) has issued a set of amendments to strengthen anti-money laundering (AML) standards and combat finance terrorism (CFT).
- These guidelines are based on rules established under the Prevention of Money Laundering Act of 2002.



The key amendments include:

- **Additional Measures:** Financial groups must implement group-wide programs to deal with money laundering. Additional measures should be taken if the host country does not meet AML/CFT requirements consistent with the home country's standards.
- **Disclosing Status:** In the case of a trust, the reporting entity must ensure that trustees disclose their status at the

commencement of an account-based relationship.

Identifying Beneficial Ownership

- These amendments aim to enhance the effectiveness of AML/CFT measures and strengthen the process of identifying beneficial ownership.

Navratna status

- **Context:** Two Central Public Sector Enterprises (CPSEs) under the Ministry of Railways, IRCON International Limited (IRCON), and RITES Ltd, have been granted 'Navratna' status.



- RITES Ltd, in its 50th year of operation, is a prominent transport infrastructure consultancy and engineering firm in India, offering services in various sectors such as transportation, railways, highways, airports, and more.
- IRCON, with 47 years of experience, specializes in railways, highways, and high-tension substation engineering and construction. The company has executed various projects in railway construction,

electrification, tunnelling, and more, both in India and abroad.

Udangudi Panangarupatti

- **Context:** Udangudi Panangarupatti, a type of palm jaggery or gur from Tamil Nadu, has received a Geographical Indication (GI) tag.
- The uniqueness of Udangudi Panangarupatti lies in its traditional preparation method, which does not involve the use of modern strategies or chemical additives like triple superphosphate and phosphoric acid, which are commonly used in other areas for jaggery production.



- This palm jaggery is distinct due to the presence of red sand dune soil found in the Udangudi region. This soil has low groundwater retention and results in a dry climate with lower moisture content in the atmosphere. These conditions lead to a high sucrose content in the palm sap, enhancing its taste.
- Udangudi jaggery has gained popularity not only locally but also internationally, being exported to countries such as Sri Lanka, Malaysia, and Singapore.

Low Female Labour Force Participation Rate in India

- **Context:** India faces significant challenges related to female labour force participation rates (LFPR), particularly in rural areas, as highlighted by the Periodic Labour Force Survey (PLFS) data

Female Labour Force Participation Rates (LFPR)

- The Female Labor Force Participation Rate (LFPR) measures the percentage of women within the working-age population (typically 15-59 years old) who are either employed or actively seeking employment.

Significance of LFPR:

- It provides insight into the level of economic activity among women in a particular country

or region, indicating their involvement in the labour force.

- A higher LFPR suggests greater participation of women in the workforce
- A lower rate indicates lower participation, often influenced by factors such as cultural norms, economic conditions, and access to employment opportunities.

Key Issues are:

Issue	Description
Low Female Labour Force Participation (LFPR)	India has one of the world's lowest LFPR rates for women. India ranks lower than most South Asian countries, except Afghanistan and Pakistan. In 2021-22, the LFPR for women aged 15-59 was only 35.6% in India.
Rural-Urban Disparities	Urban areas have a lower LFPR for women at 26.5% compared to 39.3% in rural areas.
Unpaid Family Helpers	More than half of rural women work as unpaid family helpers in household businesses, while married women are often engaged in unpaid family roles or domestic chores.
Gender Wage Gap	Rural women working as wage labourers face a higher gender wage gap compared to urban women. Self-employed women earn less than half of men's earnings, and this gap has worsened from 2017 to 2021.
Unpaid Domestic and Care Work	Women spend significant hours on unpaid domestic and caregiving services in rural areas. In rural areas, women spend over five hours daily on unpaid domestic services and more than two hours on unpaid caregiving.
Gender Disparity in Land Ownership	The agriculture census in 2015-16 showed that only 14.7% of operational landholdings in agriculture were owned by women. Most women-owned land falls into the marginal and small holding categories.
Exclusion from Agricultural Schemes	Government agricultural schemes have shifted towards cash-based initiatives, but gender-wise beneficiary data reveals that a low percentage of women farmers benefit from these schemes. Landownership is a major criterion for eligibility, which excludes many women farmers.

GI Tags (Basohli Pashmina and Udhampur's Kalari)

- **Context:** Basohli Pashmina and Udhampur's Kalari, a popular Dogra cuisine, have been awarded the prestigious Geographical Indication (GI) tag

About the items:

Item	Basohli Pashmina	Kalari Cuisine
Origin	Kathuadistrict, Jammu and Kashmir	Udhampur district, Jammu and Kashmir
Description	Traditional craft; Over 100 years old; Hand-spun product. Known for extreme softness, fineness, and lightweight nature	This dish is prepared using milk and results in a dense cheese. It is cooked in its own fat, seasoned with salt, and served hot alongside bun slices. Kalari is a beloved street food among ethnic Dogras Pashmina Shawl is made from the fine wool of the Changthangi or Pashmina goat's undercoat.
Cultural Significance	Reflects the rich tradition of craftsmanship in Jammu and Kashmir	An important part of Dogra's culinary heritage

About GI tag:

- A GI is primarily an agricultural, natural or manufactured product(handicrafts and industrial goods) originating from a definite geographical territory.
- Typically, such a name conveys an assurance of quality and distinctiveness, which is essentially attributable to the place of its origin.

Three indigenous products from Arunachal Pradesh received (GI) tag

- **Context:** Three indigenous products from Arunachal Pradesh – Yak Churpi, Khamti rice, and Tangsa textile – have received the prestigious Geographical Indication (GI) tag from the GI Registry

Product	Description	Benefits/Features
Yak Churpi	Fermented milk product (cheese) made from the unique Arunachali yak breed.	It has a high percentage of protein. It also contains omega-3 fatty acids and antioxidants. It is a source of calcium, phosphorus, magnesium, zinc, vitamin A, vitamin D and vitamin E.
Khamti rice	Sticky rice is produced in Namsai district, Arunachal Pradesh.	Known for its taste. Contains insoluble fiber promoting beneficial gut bacteria.
Tangsa textile	Product of the Tangsa tribe in Changlang district, Arunachal Pradesh. Tangsa tribe is mainly based in Changlang and consists of sub-tribes.	Textiles are known for their exotic designs and colours.

Card-on-file tokenisation for debit and credit cards

- **Context:** The Reserve Bank of India (RBI) governor, has proposed the introduction of card-on-file tokenisation (CoFT) at the issuer-bank level.
- This move aims to enhance data security and provide customers with more control over managing their card tokens.

Need:

- Under the current system, cardholders have to create different tokens for each merchant, which can be time-consuming and pose data security concerns.
- With CoFT, tokens will be created at the issuer bank-level and linked to the user's existing accounts with various e-commerce applications. This eliminates the need for duplicate tokenization processes at each app or website, enhances transaction security, and reduces card-data-related fraud.

About Tokenisation:

- Tokenisation replaces a card's 16-digit number with a unique token, specific to a user's card and one merchant at a time. These tokens hide the card's actual details, improving security, especially in case of data leaks from merchant websites. Users can choose to let their cards be tokenised for future online purchases

Recommendations of the 52nd GST Council Meeting

- **Context:** The 52nd GST Council Meeting made several important recommendations:
- Amendments in Appointment of GST Appellate Tribunals – in the conditions for appointing the President and Members of the proposed GST Appellate Tribunals.
- GST Rates for Millet Flour: GST rates for food preparation of millet flour in powder form, containing at least 70% millets by weight, were specified as follows:
 - 0% when sold in non-pre-packaged and unlabelled form.
 - 5% when sold in pre-packaged and labelled form.
- Exclusion of Extra Neutral Alcohol (ENA) from GST
- Reduced GST on Molasses: The GST rate on molasses was reduced from 28% to 5%.
- IGST Exemption for Foreign Going Vessels
- Changes in GST Rates for Services

About GST Council:

- It is a constitutional body under Article 279A (101 Constitution Amendment Act, 2016). Function: Making recommendations on issues related to the implementation of GST.



Exporter status certificates

- The Ministry of Commerce & Industry in India has launched a digital system for issuing automatic 'Status Holder' certificates under the Foreign Trade Policy (FTP) 2023.
- This system eliminates the need for exporters to apply to the Directorate General of Foreign Trade (DGFT) for a Status Certificate.
- Instead, the IT system will determine export recognition based on the Directorate General of Commercial Intelligence and Statistics (DGCIS) merchandise export electronic data and other risk parameters.
- The new system simplifies the process, reduces compliance burdens, and promotes ease of doing business. The Status Holder certification program enhances the credibility of Indian exporters in international markets and offers privileges like simplified procedures, priority custom clearances, and exemptions from certain requirements.

Periodic Labour Force Survey (PLFS) Annual Report 2022-2023

- **Context:** The Periodic Labour Force Survey (PLFS) Annual

Report for 2022-2023 has been released, focusing on key employment and unemployment indicators. The survey's key findings are as follows:

Labour Force Participation Rate (LFPR):

- The labour force participation rate (LPR) is a measure of the proportion of a country's working-age population that is actively engaged in the labour market.
- An increasing trend in LFPR for persons aged 15 years and above was observed
- In rural areas, LFPR increased from 50.7% in 2017-18 to 60.8% in 2022-23.
- In urban areas, LFPR increased from 47.6% to 50.4% over the same period.
- LFPR for males in India increased from 75.8% in 2017-18 to 78.5% in 2022-23.
- For females, LFPR increased from 23.3% to 37.0% during this time.

Worker Population Ratio (WPR):

- The worker-population ratio (WPR) is the ratio of a country's working population to its population, multiplied by 100. It's calculated by dividing the total number of workers by the total population.
- The survey showed an increasing trend in WPR for persons aged 15 years and above.
- In rural areas, WPR increased from 48.1% in 2017-18 to 59.4% in 2022-23.

- In urban areas, WPR increased from 43.9% to 47.7% during the same period.
- WPR for males in India increased from 71.2% in 2017-18 to 76.0% in 2022-23.
- For females, WPR increased from 22.0% to 35.9% over this time frame.

Unemployment Rate (UR):

- The unemployment rate is the percentage of unemployed workers in the total labour force. The labour force includes all people who are employed or unemployed. The unemployment rate is calculated by dividing the number of unemployed people by the total labour force.
- A decreasing trend in UR for persons aged 15 years and above was observed.
- In rural areas, UR decreased from 5.3% in 2017-18 to 2.4% in 2022-23.
- In urban areas, UR decreased from 7.7% to 5.4% during the same period.
- UR for males in India decreased from 6.1% in 2017-18 to 3.3% in 2022-23.
- For females, UR decreased from 5.6% to 2.9% over this time frame.

Geographical indication (GI) tag for Goan cashew (kernel)

- **Context:** The cashew industry in Goa recently received a Geographical Indication (GI) tag, which has significant implications for the region.

- The GI tag signifies that Goan cashews have unique characteristics and qualities due to their geographical origin.

Significance:

- Differentiation from Non-Goan Cashews
- Export Potential
- Economic Contribution: Cashew was introduced to Goa by the Portuguese in the 16th century, and it has since become a significant contributor to the state's economy.



Natural rubber

- **Context:** The annual rubber conference of the Association of Natural Rubber Producing Countries (ANRPC) took place in Guwahati.

Issues faced in Rubber Industry:

- Mechanization in rubber plantations, sustainable agricultural practices, supply chain strengthening, and value addition for rubber wood to ensure the sustainability of rubber farming.
- The conference also discussed the 'INROAD' project, which aims to expand rubber cultivation in north-eastern states with the support of the Automotive Tyre Manufacturers

Association (ATMA) and explored the potential for carbon crediting

- ANRPC is an inter-governmental organization comprising 13 member countries, including India, Bangladesh, Cambodia, China, Indonesia, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Sri Lanka, Thailand, and Vietnam. The organization was established in 1970 to promote collaboration among natural rubber-producing nations.

Global Hunger Index

- **Context:** In the Global Hunger Index (GHI) 2023, India has been ranked 111th out of 125 countries, indicating a serious level of hunger.
- The GHI score is based on four indicators, including under-nourishment, child stunting, child wasting, and child mortality.
- India's progress in combating hunger has almost come to a halt since 2015, and this trend is consistent with global findings.



Key Findings:

- India's GHI score is 28.7 on a

100-point scale, where lower scores represent less hunger, and higher scores indicate more severe hunger. This categorizes India's hunger severity as "serious."

- Globally, the 2023 GHI score is 18.3, considered moderate.
 - The report highlights that South Asia and Africa South of the Sahara have the highest hunger levels, with GHI scores of 27.0 each.
 - Latin America and the Caribbean are the only regions where GHI scores worsened between 2015 and 2023.
 - East and Southeast Asia, led by China, have the second-lowest 2023 GHI score, while Europe and Central Asia have the lowest score
- About GHI:**
- The Global Hunger Index (GHI) is an annual report that measures and tracks hunger at the global, regional, and country levels. The GHI is published by the Irish NGO Concern Worldwide and the German NGO Welthungerhilfe. The GHI's goal is to trigger action to reduce hunger around the world

Water use in Indian agriculture

- **Context:** The article discusses India's progress in food security and its water usage in agriculture

India's food production improvements:

- **Exports Surge:** India exported 85 million tonnes of cereals, including staples like rice, wheat, and corn, from 2020 to 2023.
- **Domestic Support:** The PM Garib Kalyan Yojana provided free rice or wheat to over 800 million people, demonstrating the country's ability to support its population while being a major exporter.
- **Milk Production Growth:** India's milk production increased from 17 MT in 1951 to 222 MT in 2022-23, making it the world's largest milk producer.
- **Diversified Production:** India has witnessed rapid growth in poultry and fishery sectors since the 2000s, signifying a shift beyond traditional staples into what's known as the pink (poultry) and blue (fishery) revolutions.

How India Uses Water for Agriculture

Aspect	Description
Agricultural Dependency	India, with 18% of the world's population, only possesses 4% of its freshwater resources. India's heavy reliance on water for agriculture is evident, with estimates varying from 78% to 90% of water usage for farming

Irrigation Status	Currently, approximately 50% of India's gross cropped area is irrigated, with plans to increase this to 75% to manage climate-related uncertainties.
Inefficient usage of water	Groundwater is the primary source of irrigation. Various subsidies and incentives are given to support it. However, it has led to over-exploitation of water, especially in the north-west region.
Economic Constraints	Extensive subsidies, including food and fertilizers, make it challenging to invest in water management.
Two Crops use maximum water	As per a NABARD-ICRIER study on Water Productivity Mapping; Rice and Sugarcane alone consume almost 60 % of India's irrigation water

Angel tax for start-ups

- **Context:** The Central Board of Direct Taxes (CBDT) has issued a directive to its officers, instructing them not to carry out scrutiny of angel tax provisions for start-ups recognized by the Department for Promotion of Industry and Internal Trade (DPIIT).
- The directive comes in response to concerns raised by start-ups regarding scrutiny notices for angel tax.
- The CBDT directive outlines two scenarios for recognized start-up companies:
 - First, if the case is selected under scrutiny solely for the applicability of Section 56(2) (viib) of the Income-tax Act, no verification is required during the assessment proceedings, and the contention of the recognized start-up on the issue will be accepted.
 - Second, if the case is selected under scrutiny for multiple issues, including Section 56(2) (viib) of the Income-tax Act, the issue will not be pursued during the assessment proceedings.
- Angel tax is income tax levied at a rate of 30.6% on unlisted companies that issue shares to investors at a price higher than their fair market value.
- The Finance Act 2023 amended Section 56(2)(viib) of the Income-tax Act, colloquially known as the 'angel tax,' to include foreign investors. DPIIT-recognized start-ups are exempt from the angel tax levy.

Amul's 'Be More Milk' campaign

- **Context:** The campaign has gained global recognition with a colourful and animated billboard displayed at New York's Time Square.

- **Aim:** The campaign promotes milk in a fresh and youthful way, encouraging global youth to embody qualities like honesty, purity, and authenticity while fostering positive cultural integration.
- Establishing climate-resilient villages in 151 districts to build carbon-positive communities.

Indian rupee's valuation

- **Context:** The Indian rupee has reached a nearly two-year high in valuation against major trading partner currencies due to central bank intervention and increased domestic inflation.
- The rupee's 40-currency real effective exchange rate (REER) showed a 5.7% overvaluation by the end of September, the highest since November 2021.
- The RBI's focus on preventing the rupee from weakening, coupled with inflation, has contributed to the high REER, although analysts believe the RBI doesn't consider it an outlandishly overvalued currency.

Vizhinjam Port

- Adani Group's Vizhinjam Port (set to be completed by 2024) (near Thiruvananthapuram in Kerala), is poised to transform the country's maritime infrastructure.

Features of the Port:

- India's first deepwater container transhipment
- Proximity to international shipping routes connecting Europe, the Gulf and East Asia.

- This transshipment terminal can handle ultra-large ships and marks India's entry into the transshipment club
- It has the potential to compete with global ports like Colombo, Singapore, Port Klang, and Jebel Ali.



'Leniency plus' norms to curb cartelisation

- **Context:** The Competition Commission of India (CCI) has introduced a draft of revised lesser penalty regulations that include a "leniency plus" program to combat cartel activities.

'Leniency plus' norms

- In the "Leniency Plus" program, a cartel member cooperating with CCI for leniency can disclose the existence of another unrelated cartel during the original leniency proceedings in exchange for an additional reduction in penalties, thereby saving time and resources in cartel investigations.
- The "Leniency Plus" regime is already recognized in several other countries.
- The "leniency plus" regime was introduced in the new Competition (Amendment) Act, 2023. However, several provisions of the Act are yet to be notified.
- Experts believe that the "leniency plus" regime will strengthen

the CCI's leniency program and enable quicker and more effective

Role of Farmer Producers' Organizations (FPOs)

- **Context:** In the past two years, Eastern Uttar Pradesh (UP) has seen significant growth in vegetable and fruit exports. This growth is attributed to Farmer Producers' Organizations (FPOs) that have played a pivotal role in promoting cluster-based farming, facilitating technology adoption, and helping farmers market their produce.

FPOs

- FPOs are voluntary organizations controlled by their farmer-members who actively participate in setting their policies and making decisions to improve their own socio-economic situation and that of their communities.

Objectives:

- To Leverage economies of scale in production and marketing to enhance productivity through efficient, cost-effective and sustainable resource use for ensuring sustainable income-oriented farming.

Role of FPOs in Modernizing Indian Agriculture:

Role	Description
Reducing Costs and Increasing Income	FPOs help reduce farmers' costs through bulk purchases of inputs and enable better marketing of farm products. They aggregate produce and offer bulk transport solutions.
Modernization of Agriculture	FPOs promote the modernization of agriculture, particularly benefiting small and marginal farmers who may lack access to modern equipment Specialized Farming: An FPO led the initiative to farm special Kalanamak rice in Siddharthnagar district (UP).
Addressing Small Land Holdings	With the majority of Indian farmers having small land holdings, FPOs encourage collective farming, addressing productivity challenges associated with limited farm size.
Enhancing Bargaining Power	FPOs empower farmers by enhancing their bargaining power and income levels, enabling them to compete with large corporate enterprises.
Access to Technology	FPOs provide access to modern technologies, credit, capacity-building, and training, and ensure traceability of agricultural produce.

Impact of Gaza conflict on India's foreign policy

- **Context:** The article highlights the implications of the Gaza crisis for India's foreign policy and security

Israeli-Palestine conflict

- The Israel-Palestine conflict is a long-standing, complex dispute

over land, territory, and political sovereignty. It involves competing claims to historical regions and has resulted in decades of tension, violence, and international involvement. Key issues include borders, settlements, the status of Jerusalem, and the rights of Palestinians. It remains a significant challenge to peace and stability in the Middle East.

- Finally, India should acknowledge the regional ambitions of Iran and Turkey, as these may have implications, especially in regions like Jammu and Kashmir.



Implications of the Gaza Crisis for India:

Implications	Description
Security Consequences	The Gaza crisis can impact India's security by fueling regional instability and violent extremism.
Foreign Policy Challenges	India may face diplomatic challenges as its relationships with Arab moderates and Israel are tested by the crisis.
Defence Deals with Israel	India and Israel have a significant defence partnership worth over USD 2 billion, but the conflict might affect it as Israel focuses on its security.
Energy Security	India's reliance on Middle East oil makes it vulnerable to energy price fluctuations due to regional conflicts involving countries like Saudi Arabia and Iran
Impact on India-Middle East-Europe Economic Corridor (IMEC)	The conflict in the Middle East, crucial for India, could impact its interests and the newly established IMEC, which aims to connect India, the Middle East, and Europe

- India should address these challenges by focusing on three key areas in its foreign policy:
- Firstly, it should encourage moderation in Israel and caution against a vengeful approach. Military means are unlikely to defeat Hamas's ideology, and an invasion could strengthen the group's legitimacy.
- Secondly, India should support the moderate Palestinian Authority to counterbalance Hamas.

Conclusion:

- Strengthening moderate voices in both Israel and Palestine, promoting reconciliation, and building a coalition of moderate states are crucial steps for India to secure its long-term interests in the Middle East.

Purple economy

- **Context:** Shanti Raghavan, the recipient of the Business Line Changemakers Award in 2020, leads the organization EnAble India. They are working on creating a 'purple economy,' which promotes disability inclusion and job opportunities on a large scale.

Care Economy

- It refers to the economic activities related to providing care and support services, often in healthcare, childcare, elderly care, and other areas aimed at improving people's well-being. It encompasses both paid and unpaid care work and is a critical aspect of social and economic development.



Purple Economy

- The purple economy is an

economic order that focuses on the sustainability of caring labour. It's an alternative vision that complements the green economy.

The purple economy aims to:

1. Organize the system around the sustainability of caring labour
2. Address the inequalities created by the disproportionate

reliance on women's unpaid and underpaid labour

3. Contribute to sustainable development by promoting the cultural potential of goods and services

4. Contribute to a richer and more diverse cultural environment

- Examples of the purple economy include Digital, Tourism, Luxury goods, and Housing.

2. Socio Economic Issues

Concerns about using Aadhaar in welfare schemes

- **Context:** Recent Moody's report highlights issues with India's digital ID program.

Aadhar

- Aadhaar is a 12-digit unique identification number issued by the Unique Identification Authority of India (UIDAI) to Indian residents. It serves as proof of identity and address and is linked to an individual's biometric and demographic information. It has revolutionized service delivery by simplifying access to government services and benefits, eliminating intermediaries, and plugging leaks into government programs.



Concerns Highlighted by Moody's Report:

Concerns	Details
Privacy and Security Concerns	Aadhaar's concentration of sensitive information with specific entities increases data breach risks (privacy and security risks)
Biometric Authentication Concerns	The adoption of Aadhaar for welfare scheme payouts like MGNREGA hinders effective implementation. Concerns about Aadhaar's biometric reliability and the burden of establishing authorization.
Concerns Related to Service Denials	Service denials are common, especially for manual labourers in hot, humid climates.
Moody's Recommendation	Moody's suggests decentralized ID systems like digital wallets with blockchain capabilities for more user control and reduced fraud.

XI. Science and Technology

ISRO logo imprints show lunar soil 'lumpy'

- **Context:** The Chandrayaan-3 rover, Pragyan, which has the Indian national emblem and the ISRO logo on its rear wheels, has been unable to leave a clear imprint of these symbols on the lunar soil.

- This inability to imprint the symbols has provided new insights into the properties of lunar soil in the South Pole region.
- It includes ensuring ethical AI use, addressing data integrity and bias issues, regulating and standardizing AI, creating international audit frameworks, adapting existing frameworks, managing complex data, and involving specialists in AI audit assignments.

Regulation of AI:

Regulatory Actions	Description
EU AI Act	European Parliament approved the act. It introduces new rules and scrutiny for AI tools, including ChatGPT. Requires developers to have their AI systems reviewed and approved for commercial use. Restricts real-time biometric surveillance and "social scoring" systems.
UK's AI Safety Regulation Intent	UK wants to be a hub for AI safety regulation. It has indicated a move towards detailed AI regulatory practices.
AI Auditing Frameworks	Various global frameworks for AI auditing exist, including COBIT and COSO ERM Frameworks. UK's Information Commissioner's Office published draft guidance on an AI auditing framework.

Features of Lunar Soil:

- It is not dusty but rather lumpy, indicating that something is binding the soil together.
- Lunar Soil is a thick layer of regolith, fragmental and unconsolidated rock material, that covers the entire lunar surface.
- Lunar soil contains no organic matter.
- This discovery could have significant implications for future missions targeting lunar habitation and sustained human presence, especially in the context of potential water discovery in the region.
- The testing of emblem and logo imprints was conducted using a lunar soil simulant (LSS) created by ISRO Satellite Integration and Test Establishment (Isite).

Links between consanguinity and genetic diseases

- **Context:** Consanguinity, the practice of marrying close relatives, is a widespread tradition still practised in many human societies, particularly in Asia and West Africa.

marrying within the same caste or tribe).

- **Consanguinity and Disease:** Consanguineous societies, like the Amish population in the U.S., have been studied for recessive diseases, leading to the discovery of new genetic diseases and insights into genetic predisposition to common disease Research suggests that consanguinity may increase the risk of diseases like type-2 diabetes.

Watermeal

- **Context:** Scientists are conducting research on watermeal, the world's smallest flowering

Using AI for audit techniques

- Recently, CAG, Girish Chandra Murmu, emphasized utilizing AI for auditing. However, it must be done ethically and accurately.

Challenges in AI auditing:



Key points regarding consanguinity and genetic diseases:

- **Prevalence:** An estimated 15-20% of the world's population practices consanguinity, with India having numerous endogamous groups (people

plant, to explore its potential as a source of nutrition and oxygen for astronauts.

- The study, conducted at the European Space Agency's (ESA) ESTEC technical centre in the Netherlands, involves subjecting watermeal to hypergravity conditions using ESA's Large Diameter Centrifuge (LDC), which can replicate gravity levels up to 20 times that of Earth.



- The researchers placed watermeal samples in specially designed boxes equipped with LED lighting to mimic natural sunlight and subjected them to hypergravity conditions within the LDC. After two weeks of experimentation, they will examine the watermeal plants and conduct chemical analyses on solid pellet extracts to understand how hypergravity affects their growth and development.
- Watermeal, known for its tiny size and floating habit on water bodies, offers a unique subject for this research due to its simplicity and rapid growth rate. It lacks roots, stems, or leaves, making it an ideal candidate for studying the effects of altered gravity on plant development.
- Watermeal is not only scientifically intriguing but also has practical benefits. It is a prolific producer of oxygen

through photosynthesis and a rich source of protein. In Thailand, it has been part of the local diet for generations.

Multimodal artificial intelligence

- **Context:** Multimodal artificial intelligence (AI) is gaining prominence as the next frontier in AI development.
- Multimodal AI systems allow users to interact with AI through various means, such as images, sounds, videos, and text. This approach is important because it aligns more closely with how humans understand and interpret information from diverse sources.

Key points regarding multimodal AI:

- Leading AI companies like OpenAI and Google are actively pursuing multimodal AI systems. OpenAI, known for GPT-3 and GPT-4, has enabled its models to understand and analyze images, and its mobile apps are being equipped with speech synthesis for more interactive conversations with chatbots.

Applications of Multimodal AI:

- Multimodal AI has practical applications, such as automatic image caption generation, detecting hate speech in memes, predicting dialogue in videos, and even potential uses in fields like medicine, autonomous driving, and robotics.
- In medicine, multimodal AI is

useful for processing complex datasets from sources like CT scans. In speech translation, AI models can perform text-to-speech, speech-to-text, speech-to-speech, and text-to-text translations for various languages.

Hemochromatosis

- **Context:** Hemochromatosis is a rare genetic disorder characterized by iron overload, which can lead to severe dysfunction in various organs.
- There are two main types of hemochromatosis: hereditary hemochromatosis and secondary hemochromatosis.

About Hemochromatosis:

- **Hereditary Hemochromatosis:** This genetic disorder results from a mutation in the HFE gene, causing individuals to absorb excessive iron from their diet.
- Unlike the body's natural ability to regulate iron intake, people with hereditary hemochromatosis accumulate iron gradually in their system, which can lead to health problems over time.
- The excess iron can affect vital organs such as the liver, heart, and pancreas, potentially causing cirrhosis, heart failure, diabetes, and arthritis.
- **Secondary Hemochromatosis:** This type is typically caused by external factors like frequent blood transfusions, excessive iron supplementation, or certain medical conditions. Iron accumulation in secondary

hemochromatosis can be more rapid and lead to organ dysfunction.

strategy for the Indian space economy, aiming to significantly boost its growth.

- It was launched in 2020 to provide a level playing field for private companies to use Indian space infrastructure

Indian space economy: Decadal Vision and Strategy

IN-SPACE

- **Context:** The Indian National Space Promotion and Authorization Centre (IN-SPACe) has unveiled a decadal vision and

- IN-SPACe is India's single-window autonomous agency under the Department of Space, responsible for promoting and authorizing various space activities for non-governmental entities (NGEs).

- It acts as a single-point interface between Indian Space Research Organisation (ISRO), and everyone who wants to participate in space-related activities or use India's space resources

The key points of IN-SPACE's Decadal Vision and Strategy:

Key Points	Details
8% Target	Aiming for an 8% global share in the space economy by 2033, up from the current 2%.
Increase Domestic and Export Share	Expanding the domestic market share from \$8 billion to \$33 billion and export market share from \$0.3 billion to \$11 billion by 2033. The current size of the global Space economy is \$ 546 billion
Collaborations	Emphasizing collaboration among stakeholders and promoting private sector participation.
Investment	Envisioning an investment of 17,600 crore (\$22 billion) over the next decade.
Focus Areas	IN-SPACe will focus on three areas: Space-for-Earth, Access-to-Space, and Space-for-Space.
10 Key Capabilities	The decadal vision includes 10 key capabilities: Demand generation, Earth observation, Communication, Navigation, Research, Talent Development, Finance, International Co-operation, Collaboration, and Policy regulation.

Bottlenecks in the Indian space sector:

- **Access to Capital:** Limited funding for downstream companies, as upstream activities receive major investments.
- **Human Resource Constraints:** A need for technically inclined marketing personnel, but they tend to prefer established businesses with market-level salaries.
- **Monopolization:** High capital

requirements make it challenging for many players to enter the industry, leading to potential monopolization.

- **Funding Disparity:** India's space budget is significantly smaller compared to countries like the US and China.

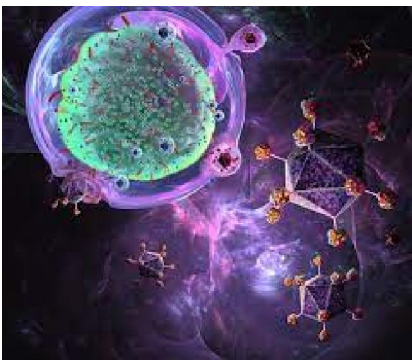
Measures taken to promote private sector participation in the space industry:

Measures	Description
New Space India Limited (NSIL)	Established to utilize ISRO's research and development for commercial purposes through Indian industry partners. Announced in Budget 2019.

Indian Space Association (ISPA)	Aims to represent the collective voice of the Indian space industry, including leading domestic and global corporations with advanced space and satellite capabilities.
National Space Policy 2023	The government has approved the Indian Space Policy (ISP) 2023, to boost private sector participation and increase investments in the space sector from private companies
ISRO Startup Hub	Launched in 2019, it provides a platform for startups to collaborate with ISRO, access ISRO's facilities, and benefit from ISRO's expertise.

CAR-T cell therapy

- **Context:** India's Drug Controller General (DCGI) has granted market authorization for CAR-T (Chimeric Antigen Receptor-T) cell therapy developed by ImmunoACT, a spin-off company from IIT-Bombay.
- This ground-breaking treatment, known as NexCAR19, is now approved for use in cases of relapsed-refractory B-cell lymphoma and leukaemia.
- The therapy's market authorization follows extensive scrutiny of data from phase 1 and 2 clinical trials by the Central Drugs Standards and Control Organisation (CDSCO).



Psyche

- **Context:** NASA has launched a spacecraft called 'Psyche' on a six-year mission to study a unique metal-rich asteroid also named 'Psyche.'
- This asteroid orbits the Sun between Mars and Jupiter.
- The primary goal of the Psyche mission is to explore the iron core, a previously unexplored aspect of planet formation.
- For the first time, the mission will examine a celestial body primarily composed of metal rather than rock and ice.
- Additionally, it aims to gain insights into the internal structure of terrestrial planets, including Earth, by directly studying the interior of a differentiated body, which would otherwise remain hidden.

Kulasekarapattinam (Tamil Nadu)

- **Context:** ISRO is establishing a second spaceport in Kulasekarapattinam, Tamil Nadu,

dedicated to Small Satellite Launch Vehicles (SSLVs) developed by the private sector.

- This spaceport will be operational in about two years and will exclusively serve the private sector, with no ISRO rocket launches planned from there.
- The SSLV is a cost-effective, flexible launch vehicle capable of deploying around 500kg satellites in a 500-km orbit. Additionally, a small space manufacturing park is planned near the spaceport, offering further support to private sector initiatives.



- Kulasekarapattinam is a town in the Thoothukudi district of Tamil Nadu. It was an ancient port dating to the 1st century AD and was contemporaneous to the existence of Kollam, Cheran, and Pandyan ports.

Self-Declaration of Freedom from Avian Influenza

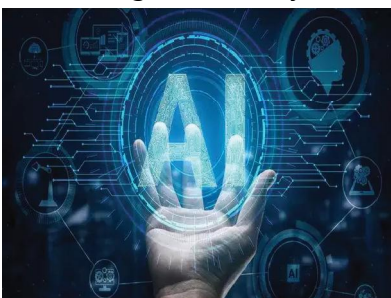
- **Context:** The World Organisation for Animal Health (WOAH) has approved India's self-declaration of freedom from Highly Pathogenic Avian Influenza (HPAI) in specific poultry compartments.
- This is a significant develop-

ment for India's poultry industry and reflects the country's commitment to maintaining high animal health and biosecurity standards.

- Compartmentalization, a strategy used to establish and maintain groups of animals with specific health statuses, played a key role in this achievement.
- India adopted the concept of poultry compartmentalization as a crucial tool to reduce the risk of disease outbreaks and facilitate the trade of poultry and poultry-related products.
- India, one of the top producers of eggs and poultry meat globally, is poised to capitalize on this achievement, potentially opening up new opportunities in the global market.

IndiaAI Report

- **Context:** Seven working groups of the Ministry of Electronics and Information Technology (MeitY) have submitted the first edition of the IndiaAI report.
- This report outlines India's strategy for the development of its artificial intelligence (AI) ecosystem. The IndiaAI program aligns with Prime Minister vision of "India for AI and AI for India" and aims to catalyse the development of a 1 trillion-dollar digital economy.



About IndiaAI Program:

- The IndiaAI program is holistic and ambitious, covering various aspects of the AI ecosystem, including compute infrastructure, data, AI financing, research and innovation, skilling, and institutional capacity for data management.
- It also focuses on supporting start-ups and entrepreneurship, India datasets program, and the India AI Compute Platform.
- The report details the operational aspects of establishing Centers of Excellence (CoEs) and outlines an institutional framework for governing data collection, management, processing, and storage.
- It includes recommendations on leveraging India's demographic dividend and enhancing AI skills, strengthening AI compute infrastructure through public-private partnerships, and implementing a Design Linked Incentive (DLI) Scheme to support domestic companies and start-ups.

Lymphatic filariasis

- **Context:** The Lao People's Democratic Republic (Lao PDR) has successfully eliminated lymphatic filariasis (LF), a mosquito-borne infectious disease, becoming the second country

to achieve this in 2023 after Bangladesh.

- Lao PDR is the 11th country in the WHO Western Pacific Region to eliminate LF.
- The World Health Organization (WHO) credited this achievement to the efforts of the Lao government, healthcare workers, communities, and national and international partners.
- Overall, 19 countries have successfully eliminated LF, with mass drug administration being a cost-effective method for treating affected residents and stopping transmission.
- LF, also known as elephantiasis, causes severe health issues, and its elimination is a significant global health goal. The elimination of LF contributes to the United Nations' sustainable development goal of "health for all" by 2030

Advanced Traffic Management System (ATMS) Standards and Specifications 2023

- **Context:** The National Highways Authority of India (NHAI) has unveiled an upgraded Advanced Traffic Management System (ATMS) with the aim of enhancing road safety and digital enforcement on National Highways and Expressways



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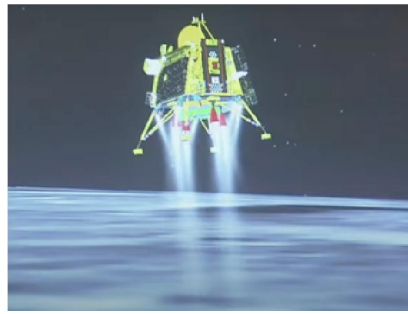
Key Features of the Initiative	Description
Video Incident Detection and Enforcement System (VIDES)	Replaces VIDS cameras, identifies 14 distinct traffic incidents – Alerts route patrol vehicles – Generates e-challans – Relays alerts to Variable Messaging Boards – Notifies nearby travellers via the 'Rajmargyatra' mobile app.
Comprehensive Camera Installation	Cameras every 10 km along National Highways – State-of-the-art Command and control Centres every 100 km – Integration of camera feeds – Integration of Vehicle Speed Detection System (VSDS) – Optimization of Automatic Number Plate Recognition (ANPR) cameras.
Traffic Monitoring Camera System (TMCS) Upgrades	Cameras every 1 km on National Highways – Advanced capabilities include automated accident and stalled vehicle detection.
Collaboration with Traffic Agencies	Dedicated workstations for traffic police representatives in Command and control Centres – Facilitates real-time coordination and response through shared camera feeds.
Disaster Management and Information Sharing	Provides inputs for effective disaster management planning. – Offers online sharing of highway status and other important information for agencies and highway users.
Digital Highways and 5G Integration	Development of integrated utility corridors along National Highways for Optic Fibre Cables (OFC) infrastructure. – Use of OFC for communication with the Command & Control Centre. – Provisions for 5G-based communication as coverage expands.

Use of Artificial Intelligence in Space and Historical Studies

Cases	Key Points
AI to read the ancient scroll	Recently, AI was used to read an ancient scroll damaged by the Vesuvius eruption Called the Vesuvius Challenge – a competition for reading Herculaneum Papyri Scrolls contain Roman and Greek texts, well-preserved. Researchers read the word 'porphyras' (Purple) in ancient Greek using AI.
AI in space exploration	Northwestern University-led team developed BTSbot for automated supernova discovery without any human involvement.
It detected supernova SN2023tyk.	BTSbot is a machine-learning algorithm trained on 1.4 million images

India's Goal of landing man on the moon

- **Context:** The Prime Minister has "directed" the Indian Space Research Organisation (ISRO) to achieve several significant milestones recently



Key Space Exploration Goals	Description
Indigenous Space Station (Bharatiya Antariksha Station) by 2035	India's plan to establish its own space station by 2035. Build on the success of past space initiatives, including Chandrayaan-3 and Aditya L-1 missions.
Indian Landing on the Moon by 2040	India's goal is to land an Indian on the moon by 2040.
Interplanetary Missions	Encouragement to work on interplanetary missions. This includes creating a space vehicle to orbit Venus and another to land on Mars.
Department of Space (DoS) Roadmap for Moon Exploration	The DoS will formulate a roadmap for moon exploration. This includes a series of Chandrayaan missions, new launch vehicle development, launch pad construction, and human-centric laboratories.
Investment and Private Sector Contribution	Noting the need for substantial investments and contributions from the private sector to achieve these goals.

Niemann-Pick disease

- **Context:** Parents of children suffering from Niemann-Pick disease, a rare genetic disorder affecting fat metabolism, are urging the Indian government to include it in the National Policy for Rare Diseases.

Niemann-Pick disease

- Niemann-Pick disease refers to

a group of inherited metabolic disorders in which abnormal amounts of lipids (fatty materials such as waxes, oils, and cholesterol) build up in the brain, spleen, liver, lungs, and bone marrow.

- **Symptoms:** Enlarged liver and spleen, difficulty in coordinating movement, frequent

respiratory infections, slurred speech among others.

- **Causes:** This condition is inherited in an autosomal recessive pattern, where both gene copies must be faulty to manifest the disease.
- **Occurrences:** Niemann-Pick disease affects one in 250,000 individuals and is expensive to treat.

National Policy for Rare Diseases

- The National Policy for Rare Diseases is a government initiative designed to address and provide support for individuals suffering from rare and uncommon medical conditions.

Significance:

- This inclusion would provide financial support to eligible patients and grant access to the expensive enzyme replacement therapy, Xenpozyme. The Drug Controller General of India recently permitted a pharma company to import and market Xenpozyme after US FDA approval.



XII. Miscellaneous

Mental Health as a Universal Human Right (UHR)

- **Context:** On World Mental Health Day 2023 (October 10), WHO underscores the theme that "Mental health is a universal human right."
- It advocates for mental health as a fundamental human right, emphasizing the need to protect individuals from mental health risks, provide accessible and quality care, and ensure liberty, independence, and inclusion in the community.

Initiatives taken for Mental Health are:

- Adoption of the Paro Declaration, which aims to provide universal access to People-centred Mental Health Care and Services.
- Tele Mental Health Assistance and Networking Across States (Tele MANAS)
- National Mental Health Programme (launched 1982)
- WHO calls for establishing Mental Health as a Universal Human Right (UHR)

Inclusion of traditional medicine on WHO's list

- **Context:** The Indian government is pushing for the inclusion of Ayurveda and related traditional medicine systems in the 11th revision of the World Health Organization's International Classification of Diseases

(ICD) as the second module of a supplementary chapter on traditional medicine conditions.

- This move aims to provide these traditional systems with a standardized language for global recognition and integration.
- The ICD serves as a common language for healthcare professionals worldwide, allowing them to share standardized information.
- ICD-11 previously included Module-1 for traditional medicine conditions originating in China.
- The inclusion of Ayurveda and related systems in Module-2 would allow for a more comprehensive approach to reporting adverse events and integrating traditional medicine into insurance and reimbursement systems, in line with WHO's goals for universal health coverage.

Gujarat's Dhordo village gets UNWTO recognition

- **Context:** Dhordo village in Gujarat has earned recognition from the United Nations World Tourism Organization (UNWTO) for being one of the Best Tourism Villages in 2023.
- Dhordo, located in the Great Rann of Kutch, is known for its annual Rann Utsav, which celebrates the region's rich cultural heritage, traditional arts, music, and crafts.

About UNWTO Recognition of villages:

- The UNWTO recognizes villages that contribute to rural development, and preserve landscapes, cultural diversity, and culinary traditions.
- These villages excel in various areas, including cultural and natural resources, sustainability, and tourism development.
- The Best Tourism Villages initiative, launched in 2021, is part of the UNWTO's efforts to promote rural development, combat depopulation, and encourage sustainable practices through tourism.



About the United Nations World Tourism Organization:

- The United Nations World Tourism Organization (UNWTO) is a specialized agency of the United Nations that promotes responsible, sustainable, and universally accessible tourism. The UNWTO is headquartered in Madrid, Spain.
- The UNWTO promotes tourism as a driver of Economic growth, Inclusive development, and Environmental sustainability.

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 அடிக் கோட்டு 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, விளிவாகச் சொல், காட்சிப்படுத்து, தெளிவுப்படுத்து போன்ற வார்த்தைகளின் பொருளைப் புரிந்துகொண்டு, அதற்கேற்ற வகையில் உங்கள் எழுத்துத் திறனை வெளிப்படுத்த வேண்டும்.



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