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CREATING CIVIL SERVANTS FOR THE NATION

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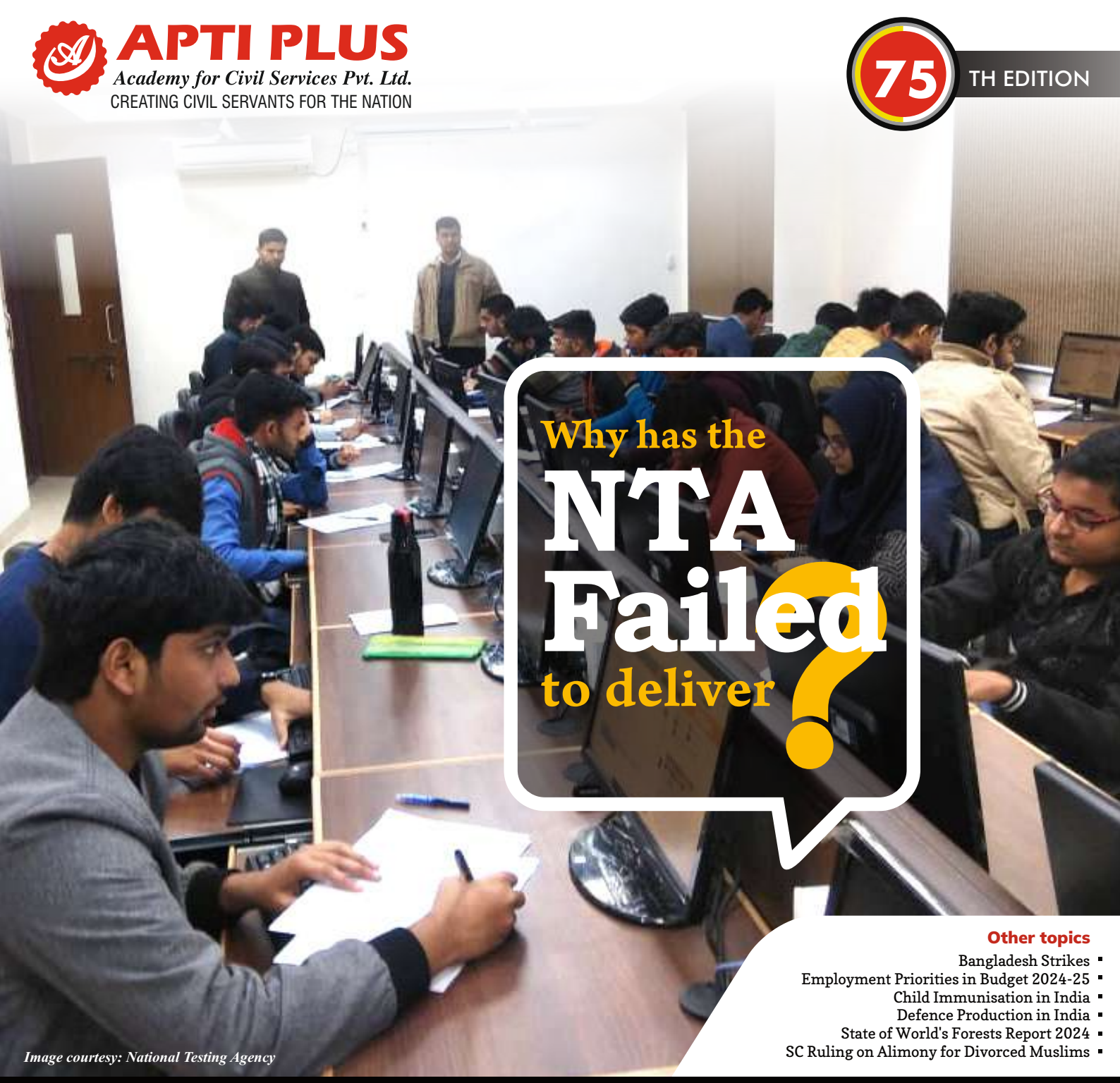

Why has the NTA Failed to deliver?

Image courtesy: National Testing Agency

Other topics

- Bangladesh Strikes
- Employment Priorities in Budget 2024-25
- Child Immunisation in India
- Defence Production in India
- State of World's Forests Report 2024
- SC Ruling on Alimony for Divorced Muslims

A **MONTHLY PERIODICAL** FOR ASPIRANTS OF UPSC CSE

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1. POLITY & GOVERNANCE

1.1 ENEMY PROPERTY

Context

- The Union government has begun to e-auction many of the 12,611 enemy properties across the country.

Enemy property

- It is **property left behind by people who previously lived in India but became citizens of China or Pakistan after the 1962 Sino-Indian war and the Indo-Pakistani wars of 1965 and 1971.**
- The value of the 'enemy properties' across the country is **estimated to be ₹1 lakh crore.**
- Uttar Pradesh has the maximum number of enemy properties, at 6,041, followed by West Bengal at 4,354.

Enemy Property Act, 1968

- The Act enabled the **state to regulate and appropriate real estate belonging to those who had left India and got citizenship of countries it has gone to war with: Pakistan and China.**
- The word "enemy" signifies any **country that has committed an act of aggression or declared war against the Union of India, and "property" is immovable assets and all negotiable instruments such as shares, debentures, and other commerce.**
- These 'enemy properties' could be "any property that belongs to, is held or managed on behalf of an enemy, an enemy subject, or an enemy firm".

The Enemy Property (Amendment and Validation) Act, 2017

- Expanded the meaning of the **term "enemy subject", and "enemy firm" to include the legal heir and successor of an 'enemy', whether a citizen of India or a citizen of a country which is not an enemy; and the succeeding firm of an 'enemy firm', irrespective of the nationality of its members.**
- **The Act clarified that once a property is declared 'enemy property', it remains so.**
- Amendment nullified a Supreme Court judgment which ruled in favour of Mohammed Amir Mohammad Khan, son of the erstwhile Raja of Mahmudabad.

SC judgment in Mohammed Amir Mohammad Khan

- Though the erstwhile **Raja of Mahmudabad took Pakistani citizenship, Amir stayed behind as an Indian citizen, and asserted claims over various properties that were originally in his family's name.**
- The Supreme Court ruled in his favour in 2005, declaring him the rightful owner, even though they have been declared 'enemy properties'.

Issues with the enemy property governance

Vacant properties:

- Many properties lay vacant and unused. **Ex. Butler Palace, the official residence of the commissioner of Avadh, Harcourt Butler, in Lucknow, has remained empty since the 1960s.**

Denial of rights:

- Many people are living as tenants for 70-80 years. But they still have no rights over the property.

New agreement:

- Tenants are all nervous after receiving **renewed agreements, which proposed arrangement by the government is only for 11 months, and it adds that on the expiry of this period or an earlier termination, the**

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licensee shall hand over the property to the licensor, which is CEPI.

How properties are disposed of?

- **Custodian of Enemy Property for India (CEPI), department under the Ministry of Home Affairs, is empowered by the Enemy Property Act, 1968 to take custody of enemy properties in India and e-auction them.**
- If the **property is valued below ₹1 crore, the custodian must offer the occupant the choice of purchase. If they refuse, the property will be e-auctioned.**
- **Those valued at over ₹1 crore but less than ₹100 crore will be disposed of by the CEPI through e-auction or through a rate determined by the Enemy Property Disposal Committee, unless the Central government chooses to retain it.**
- All auctions take place through the Metal Scrap Trade Corporation Limited, a Central public sector undertaking under the Ministry of Steel.

Conclusion

- There is a need to act in a balancing way between rights of tenants and the Supreme Court judgment in the matter.

1.2 SECTION 294 OF THE CODE OF CRIMINAL PROCEDURE (CRPC)

Context

- The Supreme Court observed that an accused cannot be said to be a witness against himself if he was called **upon to admit or deny the genuineness of the documents produced by the prosecution under Section 294 of the Code of Criminal Procedure (CrPC).**

Section 294 of the Code of Criminal Procedure (CrPC)

- It allows documents to be admitted into court without formal proof.
- **Applies to all documents filed by the prosecution or the accused, including FIRs and X-ray reports, in criminal and quasi criminal proceedings.**

Objectives

Expedite trials:

- Aimed at ensuring swift and speedy justice in criminal cases.

Avoid wasting court's time:

- Minimise procedural delays to focus on prompt resolution of cases.

Principles of fair trial:

- Emphasises the importance of fair and just trial procedures despite expediting processes.

Provisions

Admission of documents:

- Provides a streamlined process for admitting documents into evidence.

Procedure for submission:

- Specifies how documents should be filed and listed for the opposite party's acknowledgment.

Genuineness of documents:

- Allows the opposite party to admit or deny the genuineness of submitted documents.

Deemed genuineness:

- If not contested, documents are deemed genuine.

Documents covered

FIR (First Information Report):

- Considered a document under Section 294 CrPC.

Medical Reports (such as X-ray reports):

- Also fall under the ambit of Section 294.

Conditions for Admission without Formal Proof

Not Disputed:

- If the genuineness of a document is not disputed by the opposite party, it is deemed to be proved without requiring formal proof.

No Compulsion to Admit or Deny:

- The accused or the opposite party is not compelled to admit or deny the genuineness of such documents.
- This is to ensure compliance with Article 20(3) of the Constitution, which protects individuals from being compelled to testify against themselves.

Discretionary powers of court

Regarding Signatures:

- Courts have discretion to question the signature on a document or request proof of it if necessary.

Handling Non-Admitted Documents:

- If a document presented in court is not admitted due to dispute, it must be proven through regular evidentiary procedures, including witness examination and cross-examination.

Importance of the section

- It can increase the pace of the trial by avoiding the unnecessary and extra hassle of formally proving an obvious document.
- It upholds the principles of natural justice and gives each side the opportunity to be heard and the opportunity of a fair trial.

What is the Code of Criminal Procedure (CrPC)?

- **Enacted in 1973 (came into force on 1 April 1974), CrPC is the main legislation on procedure for administration of substantive criminal law in India.It provides a procedure for the investigation of crime, the collection of evidence, and the determination of guilt or innocence.**
- The CrPC also covers the arrest and detention of suspects, the conduct of trials, and the sentencing of convicted individuals.

Conclusion

- The section is important as it aims to ensure transparency and **fairness in the judicial process by allowing both the prosecution and the accused to present relevant documents.**

1.3 RIGHT TO BE FORGOTTEN

Context

- The Supreme Court agreed to hear a case related to "right to be forgotten".

What is the right to be forgotten?

- It can be described as the **right to remove one's digital footprint (from Internet searches, etc.) where it violates the right to privacy.**
- It would mean that an **individual who is no longer desirous of his personal data to be processed or stored, should be able to remove it from the system where the personal data/ information is no longer necessary, relevant, or is incorrect and serves no legitimate interest.**

Origin of right to be forgotten

- In 2014, in "**Google Spain case**", the Luxembourg-based **Court of Justice of the European Union (CJEU) ruled on the plea of Spanish lawyer Mario Costeja González to have Google remove information from 1998 regarding the forced sale of his property due to social security debt.**

- **The court affirmed that there exists a right to be forgotten.**
- **Citing Articles 7 (respect for private and family life) and 8 (protection of personal data) of the EU Charter on Fundamental Rights**, the CJEU ruled that search engines must cater to individual requests to remove data that "appear to be inadequate, irrelevant or no longer relevant or excessive in the light of the time that had elapsed".

Right to be forgotten in EU

- It is known in European information privacy regulation as the "**right to erasure**".
- Informational self-determination — an individual's right to control and limit her personal information — is now widely recognised in EU law.
- Article 17 of the EU's General Data Protection Regulation (GDPR) describes the right to erasure.

How is the right interpreted in India?

- In India, there is no statutory framework that prescribes the right to be forgotten.
- In 2017 judgement in Justice K S Puttaswamy v Union of India — **the apex court explicitly recognised the right to privacy as a fundamental right, placing it as a facet of the right to life, right to equality, and the right to freedom of speech and expression.**
- Justice S K Kaul while concurring with the judgement mentioned about the right to be forgotten.

Notable case

"Jorawer Singh Mundy vs Union of India" case (2021)

- In this case an American citizen approached the **Delhi High Court seeking the removal of all publicly available records of a case registered against him under the Narcotics Drugs and Psychotropic Substances Act, 1985.**
- He claimed that even though the trial court had cleared him back in 2011, a quick Google search disclosed the court's ruling in his case, which prevented him from finding employment in the USA.
- Despite having a strong academic background, he said that this hurt his career opportunities. Thus, the court directed respondents like 'Indian Kanoon' to remove the same.

Main challenges associated with Right to be forgotten

Issues of Privacy:

- A Person may want to de-link information about his criminal records which make it difficult for people to access certain reports when they search them.
- **The person's right to be left alone, interpreted from Article 21, comes in conflict with the rights of the media to report on issues.**

Note: Article 19(1)(a) of the Indian Constitution, which gives freedom of speech and expression includes within its ambit, freedom of press.

Enforceability Against Private Individuals:

- The right is normally to be claimed against a private party raising the question of whether fundamental rights can be enforced against the private individual, which is generally enforceable against the state.

What are the Government Steps to Protect Privacy?

B N Srikrishna Committee:

- Government appointed a committee of experts on data protection under the chairmanship of Justice B N Srikrishna that submitted its report in July 2018.

Information Technology Act, 2000:

- The IT Act provides for safeguard against certain breaches in relation to data from computer systems. It contains provisions to

prevent the unauthorised use of computers, computer systems and data stored therein.

Conclusion

- In this digital age, data is a valuable resource that should not be left unregulated. **In this context, the time is ripe for India to have a robust data protection regime.** The government should expedite the enactment of the **Personal Data Protection Bill 2019.**

1.4 NIPUN BHARAT

Context

- To ensure the **implementation of recommendation of National Education Policy 2020, that by the time children reach Grade 3, they have acquired foundational literacy and numeracy skills, Centre had launched the NIPUN Bharat Mission.**

About

- The **Ministry of Education has launched NIPUN Bharat, on July 5, 2021,** for ensuring that every child in the country necessarily **attains foundational literacy and numeracy (FLN) by the end of Grade 3, by 2026-27.**

Nodal Ministry

- Ministry of Education

Focus

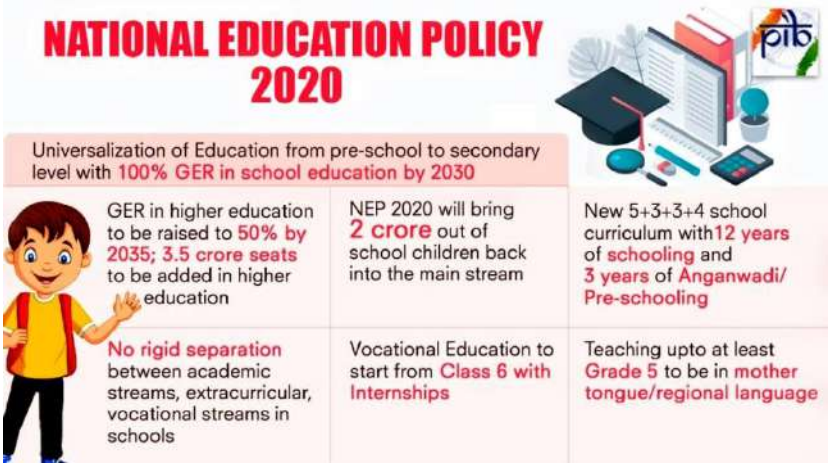
- The mission will focus on children of the age group of 3 to 9 years including preschool to Grade 3.
- **The children who are in Classes 4 and 5 and have not attained the foundational skills will be provided individual teacher guidance and support, peer support and age-appropriate and supplementary graded learning materials to acquire the necessary competencies.**

Implementation

- The Department of School Education and Literacy, Ministry of Education (MoE) will be the implementing agency at the national level and will be headed by a Mission Director.

Objectives

- To **give children access to and keep them in school during their early years, strengthening teacher capacity, creating high-quality, diversified student and teacher resources/learning materials, and monitoring each child's progress in achieving learning outcomes.**
- All public, government-aided, and private schools must fulfil the mission's aims and objectives by 2026–27.



- To create an **inclusive learning environment in the classroom by integrating play, discovery, and activity-based pedagogies, connecting them to the children's daily lives, and formally embracing their native languages.**
- To help kids develop a passion for reading, independence, and engagement in their writing, as well as comprehension and long-lasting reading and writing abilities.
- To make children understand the reasoning in the domains of numbers, measurement and shapes; and enable them to become independent in problem-solving by way of numeracy and spatial understanding skills.

National Education Policy of India 2020 (NEP 2020)

- The National Education Policy of India 2020 (NEP 2020), which was started by the Union Cabinet of India on 29 July 2020, outlines the vision of the new education system of India.
- **The new policy replaces the previous National Policy on Education, 1986. The policy is a comprehensive framework for elementary education to higher as well as vocational training in both rural and urban India.**
- The policy aims to transform India's education system by 2030.

Conclusion

- The active participation of families, especially mothers, should be further encouraged to meet the goals of the NIPUN Bharat Mission. For young children to grow and thrive, nothing can be more powerful than teachers and mothers joining hands.

1.5 SAMAGRA SHIKSHA SCHEME

Context

- The Centre has stopped funding for the Samagra Shiksha Scheme in West Bengal, Punjab, and Delhi..

The Samagra Shiksha Scheme

- It supports implementation of the **Right of Children to Free and Compulsory Education (RTE) Act, 2009 and National Education Policy (NEP) 2020.**
- The scheme has been **extended for a period of five years i.e., from 2021-22 to 2025-26.**
- The Samagra Shiksha scheme **is an integrated scheme for school education covering the entire gamut from pre-school to class XII.**
- The scheme **treats school education as a continuum and is in accordance with Sustainable Development Goal for Education (SDG-4).**
- **The Goal SDG-4.1 states that** "By 2030, ensure that all boys and girls complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes".
- **The SDG 4.5 states that "**By 2030, eliminate gender disparities in education and ensure equal access to all levels of Education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations"
- The scheme aims to ensure that **all children have access to quality education with an equitable and inclusive classroom environment.**

Coverage

- **1.16 million schools, over 156 million students and 5.7 million Teachers of Govt. and Aided schools (from pre-primary to senior secondary level) by involving all stakeholders of the school ecosystem** i.e. teachers, teacher educators, students,

parents, community, school management committees, SCERTs, DIETs, BITEs, Block resource Persons, Cluster resource persons, volunteers for providing quality, inclusive and equitable education.

Funding pattern

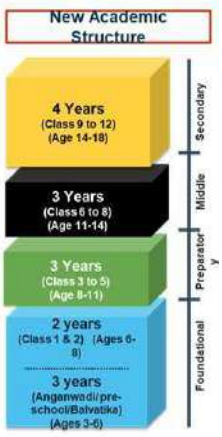
- The Scheme is being implemented as a Centrally Sponsored Scheme.
- **The fund sharing pattern between Centre and States :**
  - 90:10 for the North-Eastern States and the Himalayan States and 60:40 for all other States and Union Territories with Legislature.
- It is 100% centrally sponsored for Union Territories without Legislature.

Objectives

- Implementing the recommendation of NEP 2020;
- Supporting States & UTs in implementing RTE Act, 2009;
- Focus on Early Childhood Care and Education;
- Emphasis on Foundational Literacy and Numeracy;
- Strengthening and up-gradation of SCERTs/SIE and DIETs;
- Ensuring safe, secure and conducive learning environment and minimum standards in schooling provisions;
- Promoting vocationalisation of education

Samagra Shiksha supports new pedagogical and curricular structure of school education (5+3+3+4):

- **3 years in Anganwadi/pre-school and 12 years in school**
- **Foundational stage (5) :** multilevel, play/activity-based learning
- **Preparatory Stage (3) :**play, discovery, and activity-based and interactive classroom learning
- **Middle Stage (3) :**experiential learning in the sciences, mathematics, arts, social sciences, and humanities
- **Secondary Stage (4) :** multidisciplinary study, greater critical thinking, flexibility and student choice of subjects.



1.6 ASMITA

Context

- The Ministry of Education and the University Grants Commission (UGC) unveiled three initiatives aimed at enhancing the availability of educational resources in Indian languages.

ASMITA (Augmenting Study Materials in Indian Languages through Translation and Academic Writing)

- **Aim:**To develop 1,000 books in 22 languages within five years, resulting in 22,000 books in Bharatiya bhasha
- **Joint effort:** A Joint effort between the **UGC(University Grants Commission) and the Bharatiya Bhasha Samiti,** a high-powered committee established by the ministry.

Objectives

- To promote and integrate Indian languages more deeply into the education system to make the learning experience and make it more inclusive.
- It is a **part of a broader strategy to enhance the accessibility and quality of educational materials across various Indian languages.**

- **Nodal universities:** Thirteen nodal universities have been identified to lead the project, along with member universities from various regions.

SOPs

- The UGC has created a **standard operating procedure (SOP) for the book-writing process in each assigned language.**
- The SOP includes the **identification of nodal officers, authors, allocation of title, subject and program, writing and editing, submission of the manuscript, review and plagiarism check, finalisation, designing, proof-reading and e-publication.**

'BahubhashaShabdakosh'

- The ministry also launched the "**BahubhashaShabdakosh"**
- It is a **single-point reference for all the words in all Indian languages and their meanings.**
- This initiative will be **developed by the Central Institute of Indian Languages (CIIL)** in collaboration with the **Bharatiya Bhasha Samiti.**
- It will **help in using Bharatiya words, phrases and sentences for various new-age domains like IT, industry, research, and education.**

Real Time Translation Architecture

- While details have not been provided about it, the launch of a Real-time Translation Architecture was mentioned as part of the trio of initiatives unveiled alongside ASMITA and the BahubhashaShabdakosh.

Significance

- **Empowering Learners:** Initiatives will help students learn in Indian languages, support their academic growth, and preserve India's languages.
- **Bridging Linguistic Divides:** The ASMITA project and its efforts will make it easier for students from different backgrounds to access education by **providing materials in many Indian languages.**
- **Promotion of Social Cohesion:** These initiatives can bring people together by promoting understanding and respect for India's languages and cultures.
- **Global Citizenship:** These initiatives will **help young Indians become responsible global citizens by learning about different cultures and languages.**

1.7 PARAKH

Context

- A report submitted to the **Union Education Ministry suggests that a student's performance in Classes 9th, 10th, and 11th should be considered when awarding final marks in Class 12th.**

PARAKH (Performance Assessment, Review and Analysis of Knowledge for Holistic Development)

- It is a national assessment regulator **set up under NCERT on February 8, 2024, as an independent constituent unit to fulfil the basic objectives of setting norms,** standards, and guidelines and implementing activities related to student assessment, along with other tasks as mandated in the National Education Policy (NEP) 2020.

Focus areas of Parakh

There are four major areas of focus for PARAKH:

1. **Capacity Development in Competency Based Assessment**
2. **Large-Scale Achievement Survey**
3. **Equivalence of School Boards**
4. **Holistic Progress Cards for the Foundational, Preparational, Middle and Secondary Stages.**

Activities undertaken

1. Capacity Development in Competency Based Assessment

- **Project Vidyasagar** – PARAKH in collaboration with **PhD Chamber of Commerce (PhDCC) is organising a series of workshops in all the States/UTs of India for the Dissemination of Learning Competencies at Foundational, Preparatory, Middle and Secondary Levels as per National Curriculum Framework 2023 (NCF, 2023).**
- The aim of this exercise is to familiarise the teacher educators and teachers with the pedagogical and policy changes.

2. Large-Scale Achievement Survey

- PARAKH, has been mandated to organise large-scale achievement surveys to periodically monitor and assess the education of the country.
- **PARAKH worked with States/UTs in conducting the State Educational Achievement Survey on November 3, 2023, assessing learners from Grades 3, 6, and 9 to gauge competencies in Foundational Literacy, Foundational Numeracy, Language, and Mathematics at the end of foundational, preparatory, and middle stages with educational blocks as the units of assessment.**
- Administered in 30 States/UTs, the assessment covered an approximate sample of 8 million learners.

3. Equivalence of School Boards

- PARAKH is working with boards of school education to develop recommendations pertaining to examination reforms.
- Once equivalence is brought across all Boards of India, it will be possible to allocate credit points to all forms of learning, be it academic, vocational, or experiential.

4. Holistic Progress Cards for the Foundational, Preparational, Middle and Secondary Stages.

- **Development and Dissemination of the Holistic Progress Card for Foundational, Preparatory, Middle and Secondary stages, a 360-degree Holistic Progress Card has been developed in order to aid assessment of Competency-Based learning-teaching by making assessments more comprehensive and holistic in nature.**
- PARAKH has completed the development of the Holistic Progress Cards (HPC) for the foundational, preparatory, and middle stages.

1.8 SECTION 12(1)(C) OF RTE 2009

Context

- The Bombay High Court quashed the Maharashtra government's recent notification regarding quota for weaker sections and disadvantaged groups.

What was the notification about?

- **It had exempted private schools — located within one kilometre radius of a government or government-aided school — from providing a 25% quota for students belonging to "weaker section and disadvantaged group in the neighbourhood".**
- This meant that private schools within a one km radius of a government or government-aided school (which receives money from the government) would not have to set aside 25% of seats for students from socio-economically backward sections.
- **The exemption also applied to private schools established in the future, as long as they were built within a one km radius of a government or government-aided school.**

Section 12(1)(c) of the Right of Children to Free and Compulsory Education Act, 2009 (RTE Act)

- It requires **private unaided schools and special category schools to admit at least 25% of their class I or pre-primary students from disadvantaged groups and weaker sections.(between the ages of six and 14).**
- Students admitted under this quota are given fee concessions.

Section 12(2) of the RTE Act

- According to this section, the state governments are bound to reimburse expenses incurred by the school per child, or the fee amount, whichever is less.

Its validity is upheld by courts in various judgement under:

- **Article 15(5) of the Constitution, which allow for state regulation of reservations in private educational institutions while respecting minority rights under Article 30(1) and**
- **Article 21A of the Indian Constitution which guarantees the right to education as a fundamental right for children between the ages of 6 and 14 years, which was added to the Constitution by the 86th Amendment Act of 2002**

High Court ruling

- It ruled that the amendments were not only unconstitutional, being violative of Articles 14 (equality), 21 (right to life) and 21-A (providing free and compulsory elementary education) of the Constitution of India, but defied the provisions of the RTE Act.

Why have states introduced such exemptions?

Decreased enrollment ratio in government schools:

- Karnataka had, till date, allowed parents to admit children to private schools despite having government schools in the same neighbourhood. This has resulted in the enrollment ratio [in government schools] dropping drastically.

Failure to reimburse the fees to students:

- Private schools and teachers' organisations have highlighted that state governments have often failed to reimburse the fees for students admitted through this quota.
- **In Maharashtra, the Maharashtra English School Trustees Association (MESTA) threatened to boycott RTE admissions last December citing pending payments of Rs 1,800 crore in reimbursements.**

Criticism

- Section 12(1)(C) of the RTE Act is aimed at bringing parity and equality of opportunity for all children. This is being violated.
- One of the intentions of this quota was to enable students from marginalised backgrounds to get education in good schools. However this purpose is defeated.
- Such an amendment might close the small window through which some of the disadvantaged students got access to good education in private schools.

Way ahead

- **Disparity and Documentation:** There is a need for centralised guidelines to ensure inclusion of all socially and culturally disadvantaged groups, beyond SCs and STs, as currently specified under Section 2(d) of the Act.
- **Public-Private Partnerships:** Effective enforcement requires robust public-private partnerships to ensure adequate implementation and support for the Act's provisions.
- **Enhanced Documentation:** Improve documentation and impact assessment to ensure equitable distribution of benefits among all disadvantaged groups.

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1.9 RELIGIOUS PRACTICES VS LAW

Context

- Some essential religious practices may be contrary to constitutional ethos and values.

Religious practices and rights versus legal and Constitutional issues

- **Freedom of Religion vs. Constitutional Governance:** Article 25 of the Indian Constitution grants individuals the right to freely practise their religion, encompassing rituals and ceremonies, with limitations imposed to safeguard public order, health, morality, and fundamental rights.
- **Essential Religious Practices Doctrine:** Certain practices are deemed essential to a religion based on doctrines and beliefs of that religion. **These practices are protected under Article 25. *Shri Shirur Mutt Case, 1954* held that the term 'religion' will include those rituals that are integral to a particular religion.**
- **Judicial Scrutiny and Intervention:** Courts intervene to uphold constitutional principles, ensuring that religious practices do not infringe upon the rights of individuals or conflict with constitutional morality. **Ex. In 2017, the Supreme Court of India upheld the right of Sikh individuals to wear turbans in workplaces considering it a right under article 25.**
- **Public Order and Morality:** The state has the authority to regulate or restrict religious practices that undermine public order, morality, or health, even if they are considered religious by certain groups. **Muslim Women (Protection of Rights on Marriage Act was enacted in 2019 to criminalise Triple Talaq,overriding a Supreme Court ruling that declared it unconstitutional balancing religious practices withgender equality and constitutional morality.**
- **Right to Privacy and Human Dignity:** Individuals have rights to privacy and dignity in practising their religious beliefs, protected under Article 21 of the Constitution. But **article 25(2) of the Constitution gives the power to the state to make laws with respect to regulation of economic, political, and otheractivities related to religion.**

Issues arising from religious freedom in India

- **Conflict between Religious Practices and Gender Equality:** Many religious practices and customs discriminate against women or restrict their participation based on traditional beliefs. **The Sabarimala Temple case where restrictions on women of menstruating age entering the temple were challenged on grounds of gender equality is one such example.**
- **Public Order and Religious Practices**: Certain religious practices like processions, festivals with loudspeakers, or animal sacrifices can provoke public disorder or legal issues, often sparking controversies related to noise pollution and communal tensions.
- **Interfaith Marriages and Personal Freedom:** Social and legal challenges faced by individuals opting for interfaith marriages due to societal norms or opposition from religious institutions. **Hadiya, a Hindu woman from Kerala, converted to Islam and married a Muslim man in 2016. Legal battle was fought against this marriage** by parents and the Supreme Court declared the marriage as legal.
- **Caste-Based Discrimination and Religious Practices:** Certain religious practices perpetuate caste-based discrimination, denying equal rights and opportunities to Dalits and lower castes. Ex. T**he religious practice of angapradakshinam(the practice involving Dalits and non-Brahmins rolling over on left-over plantain leaves)is often**

considered a caste discrimination under Articles 15 and 17 of the Constitution.

- **Secularism vs. Religious Dominance**: Debates over state funding or support for religious institutions, government interference in religious matters, or the influence of religious leaders on policy making, highlighting tensions between secular governance and religious autonomy in India.

Way ahead

- **Promotion of Interfaith Dialogue and Understanding**: Initiatives like the **United Nations Alliance of Civilizations (UNAOC) advocate for interfaith dialogue worldwide**, aiming to enhance mutual respect and tolerance among diverse religious communities, thereby fostering peaceful coexistence.
- **Education on Religious Pluralism and Human Rights**: Integrate education on religious pluralism, human rights, and constitutional principles into school curricula to cultivate a culture of respect and understanding from a young age. **The Council of Europe's "Education for Democratic Citizenship and Human Rights Education" (EDC/HRE) framework emphasises teaching tolerance and respect for diversity in schools across Europe.**
- **Legal Reforms to Strengthen Constitutional Safeguards**: Implement legal reforms to strengthen protections for religious minorities and ensure that constitutional guarantees of religious freedom are upheld consistently. **Amending SC and SC Act, making laws in religious vigilantism, etc can be some way ahead.**
- **Empowerment of Civil Society and Religious Leaders**: Support initiatives that empower civil society organisations and religious leaders to promote tolerance, address discrimination, and advocate for religious freedom. **For Example: The International Center for Religion and Diplomacy (ICRD) engages religious leaders globally in conflict resolution and peacebuilding efforts.**
- **International Collaboration and Best Practice Sharing**: There is a need for international collaboration and exchange of best practices on religious freedom issues to learn from successful approaches in different countries.

Conclusion

- The issue of balancing religious freedom with constitutional values in India is complex and multifaceted, requiring nuanced considerations and robust legal frameworks.

1.10 WHY HAS NATIONAL TESTING AGENCY (NTA) FAILED TO DELIVER

Context

- The NTA has come across allegations of cheating, paper leaks and other irregularities impacting its reputation.

What is the NTA?

- The NTA was **set up in 2017 as a specialist, self-sustaining and autonomous organisation under the aegis of the Union Education Ministry.**
- Its Director General and Governing Body are appointed by the Union government.
- It is registered as society under societies registration act and its main mandate is to **conduct efficient, transparent and international standard tests to assess the competency of candidates for admission, and recruitment purposes.**
- It conducts major all-India examinations, **such as the JEE for engineering college admissions, NEET-UG, and UGC-NET (both of which had previously been conducted by the Central Board for Secondary Education or CBSE), as well as the entrance tests for**

Jawaharlal Nehru University and Delhi University.

Origins and Objectives of the NTA

- **Original Purpose:** The NTA was established with the primary objective of transitioning all major entrance examinations in India to computer-based tests. This move aimed to enhance efficiency, reduce malpractices such as question paper leaks, and introduce fairness in assessment processes.
- **Successes:**Initially, the NTA successfully conducted several examinations in computer-based mode, claiming benefits such as better security, elimination of human error in subjective assessments, and faster result processing.

Challenges and Reversals

- **UGC-NET Case:** Despite being transitioned to computer-adaptive mode, **the UGC-NET exam recently reverted to pen-and-paper format due to concerns about leaks during the printing process.** This decision was followed by the cancellation of the examination citing cyber threats.
- **NEET-UG Contradiction:** In contrast, NEET-UG remains a pen-and-paper exam despite NTA's design for computer-based testing. The Health Ministry's resistance, citing rural student readiness and legal rulings, highlights challenges in implementing uniform testing modes across diverse demographics.
- **Questionable Legal liability:** It is registered as a society and is a separate legal entity, which raises questions about the government's legal liability for the NTA's actions.

Operational Limitations of the NTA

- **Understaffing and Outsourcing: The NTA operates with a minimal permanent staff of about 25 members**, outsourcing critical functions to third-party technical partners. This reliance poses challenges in maintaining accountability and robustness in examination procedures.
- **Infrastructure Issues:** Handling large-scale pen-and-paper exams like NEET-UG requires extensive logistical support, including secure question paper setting, encryption, printing, and distribution to numerous centres nationwide. Weak links in this chain increase vulnerability to malpractices.

Way ahead

- **High-Level Panel Recommendations:** A panel led by former ISRO chief K. Radhakrishnan has been tasked to recommend reforms. Key areas include enhancing data security protocols, bolstering NTA's operational capabilities, and improving examination processes.

Diverse Stakeholder Proposals:

- **Return to Pen-and-Paper:** Some stakeholders advocate for reinforcing the NTA's infrastructure to effectively manage pen-and-paper exams akin to the previous CBSE system. This approach emphasises equity, particularly for rural and technologically underserved students.
- **Decentralisation Debate:** Opposing views suggest decentralising examination responsibilities, allowing state governments and universities to conduct their entrance tests. This model seeks to cater better to regional educational needs and reduce dependence on a centralised agency.
- **Systemic Assessment Reform:** Advocates for systemic changes propose moving away from single-entrance examinations. They recommend integrating periodic assessments during school education, leveraging online testing and AI-based proctoring overseen by the NTA.
- **Capacity Building and Training:** Conduct regular training programs for NTA staff, technical partners, and examination center

personnel on security protocols and best practices.

Conclusion

- The NTA's journey reflects evolving challenges in modernizing India's examination system while striving for fairness and integrity. The path ahead involves balancing technological advancements with inclusive educational access, backed by robust governance and stakeholder consensus.

1.11 NEW SECTIONS IN CRIMINAL LAWS

Context

- The three new criminal laws came into effect on July 1.

New Criminal Codes

- The **Bharatiya Nagarik Suraksha Sanhita, 2023 (BNSS) will replace the Criminal Procedure Code (CrPC); the Bharatiya Nyaya Sanhita (BNS) will replace the Indian Penal Code; and the BharatiyaSakshyaAdhiniyam will replace the Indian Evidence Act.**

Important changes in the sections in BNS from IPC

- The BNS has 358 sections, **compared to the 511 in the IPC. Therefore, the longstanding numbering of many criminal charges listed in the IPC has changed. For instance, Section 420, which defined cheating, led to the number '420' becoming a catchall and commonly used term for such crimes. It is now listed as Section 318 in the BNS.**

Here is a list of some major criminal charges and how they are numbered in the BNS

Punishment for murder

- Previously Section 302 in the Indian Penal Code, the offence is now covered under Section 103 of the Bharatiya Nyaya Sanhita.

Attempt to murder

- Previously Section 307 in the Indian Penal Code, the offence is now covered under Section 109 of the Bharatiya Nyaya Sanhita.

Rape

- Previously Section 375 in the Indian Penal Code, the offence is now covered under Section 63 of the Bharatiya Nyaya Sanhita.

Gang rape

- Previously Section 376D in the Indian Penal Code, the offence is now covered under Section 70 (1) of the Bharatiya Nyaya Sanhita.

Cruelty against a married woman

- Previously Section 498A in the Indian Penal Code, the offence is now covered under Section 85 of the Bharatiya Nyaya Sanhita.

Dowry death

- Previously Section 304B in the Indian Penal Code, the offence is now covered under Section 80 of the Bharatiya Nyaya Sanhita.

Sexual harassment

- Previously Section 354A in the Indian Penal Code, the offence is now covered under Section 75 of the Bharatiya Nyaya Sanhita.

Outraging the modesty of a woman

- Previously Section 354 in the Indian Penal Code, the offence is now covered under Section 74 of the Bharatiya Nyaya Sanhita.

Criminal intimidation

- Previously Section 503 in the Indian Penal Code, the offence is now covered under Section 351 of the Bharatiya Nyaya Sanhita.

Defamation

- Previously Section 499 in the Indian Penal Code, the offence is now covered under Section 356 of the Bharatiya Nyaya Sanhita.

Cheating

- Previously Section 420 in the Indian Penal Code, the offence is now covered under Section 318 of the Bharatiya Nyaya Sanhita.

Criminal Conspiracy

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- Previously Section 120A in the Indian Penal Code, the offence is now covered under Section 61 of the Bharatiya Nyaya Sanhita.

Sedition

- Previously Section 124A in the Indian Penal Code, the offence is now covered under Section 152 of the Bharatiya Nyaya Sanhita.

Promoting enmity between different groups

- Previously Section 153A in the Indian Penal Code, the offence is now covered under Section 196 of the Bharatiya Nyaya Sanhita.

Imputations, assertions prejudicial to national integration

- Previously Section 153B in the Indian Penal Code, the offence is now covered under Section 197 of the Bharatiya Nyaya Sanhita.

Statements conducing to public mischief

- Previously Section 505 in the Indian Penal Code, the offence is now covered under Section 353 of the Bharatiya Nyaya Sanhita.

Public nuisance

- Previously Section 268 in the Indian Penal Code, the offence is now covered under Section 270 of the Bharatiya Nyaya Sanhita.

Conclusion

- Passed in parliament last year, the government billed the new criminal laws as an effort to remove colonial influences on India's legal system.

1.12 SHORT ARTICLES

DIGIPIN

Context

- The Department of Post has released a beta version of the National Addressing Grid 'DIGIPIN'.

About

- It is an **initiative to establish a standardised, geo-coded addressing system in India, for ensuring simplified addressing solutions for citizen-centric delivery of public and private services.**

Collaboration

- Department of post and IIT Hyderabad

Functioning

- The DIGIPIN layer will act as the addressing reference system which can be used for logically locating addresses with directional properties built into it.

Accessibility

- It is proposed to be fully available in the public domain and can be easily accessed by everyone.

Utility

- It can be used as the base layer for other ecosystems, including various service providers and utilities.

Significance

- This system **will act as a strong and robust pillar of Geospatial Governance.**
- It will lead to enhancements in public service delivery, faster emergency response and a significant boost to logistics efficiency.

NPS Vatsalya

Context

- Govt introduces pension scheme for minor children in Union Budget 2024.

About NPS Vatsalya

- It is a new pension scheme under the National Pension Scheme (NPS).
- It is a **financial plan that caters to the minor children's parents and guardians.**
- Under this scheme, parents and guardians can open an NPS account for their children and contribute an amount every month or year till the child reaches 18 years.

Benefits of NPS Vatsalya Scheme

- **Early Savings Habits**: Encourages parents for children to start saving and investing early in life and imparts a habit of financial discipline from a young age.
- **Long-term Accumulation**: Contributions start

early when the child is a minor and allows for significant accumulation over several decades until retirement age.

- **Conversion to Standard NPS**: When the child turns 18, the account converts to a standard NPS account and an independent management and contributions.
- **Portability**: Offers flexibility, allowing the account holder to switch jobs without affecting the NPS account.
- **Retirement Corpus**: Builds a substantial retirement corpus over time, providing financial security during retirement years. **At retirement, one can withdraw a portion (60%) and allocate the rest (40%) to an annuity for regular income.**
- **Financial Education**: Promotes responsible financial management and educates children about savings and investment strategies early on.
- **Lifetime Benefit**: The NPS account can be continued throughout the account holder's life, ensuring sustained financial planning and security well into retirement.

Changes in NPS as proposed in Union budget 2024

- Government has also increased the **National Pension Scheme limit for employers in the private sector from 10 per cent to 14 percent of the employee's salary.**
- **To improve social security benefits, deduction of expenditure by employers towards NPS is proposed to be increased from 10 to 14 percent of the employee's salary.**
- Similarly, deduction of this expenditure up to 14 percent of salary from the income of employees in the private sector, public sector banks and undertakings, opting for the new tax regime, is proposed to be provided," said the FM, in her Budget Speech.

1.13 SNIPPETS

Topics	Details
Tata Institute of Social Sciences (TISS)	• Over a 100 staff members of the Tata Institute of Social Sciences (TISS) received termination letters on June 28, and were asked to not report to work come July. • It is a multi-campus public university in Mumbai, India. • It is **Asia's oldest institute for professional social work education.** • **Founded in 1936** as the Sir Dorabji Tata Graduate School of Social Work by the Sir Dorabji Tata Trust. • In 1944, the institute **was officially renamed the Tata Institute of Social Sciences.** • **In 1964, the Government of India declared TISS a deemed university under Section 3 of the University Grants Commission Act (UGC), 1956.** • In 1954, TISS moved to a permanent campus at Deonar, Mumbai (now known as the Main Campus). • **The National Institutional Ranking Framework (NIRF) ranking:** It is in the 151–200 band overall in India in 2023and 98 among universities. • TISS's academic programs focus on the social sciences and offer post-graduate and doctoral degrees in Habitat Studies, Management and Labour Studies, Disaster Studies, Development Studies, Education, Gender Studies, Health Studies, Law, Media and Cultural Studies, Public Policy, Rural Development and Social Work.

1.14 OTHER IMPORTANT ARTICLES TO BE READ FROM IASGYAN WEBSITE

Topic	Context
Karnataka Bill on gig workers	Karnataka releases draft of Gig Workers (Social Security and Welfare) Bill, following Rajasthan's lead in India.
PM-Surya Ghar-Muft Bijli Yojana	The government has issued operational guidelines for the implementation of incentives to DISCOMs under PM-Surya Ghar- Muft Bijli Yojana.
SC's lokadalat drive	The Supreme Court commenced its week-long special Lok Adalat drive to amicably settle long-pending disputes as a part of its 75th anniversary celebrations.
Digital Bharat Nidhi	India's Department of Telecommunications (DoT) released draft rules for the Digital Bharat Nidhi (DBN) on.
Private Papers of public figures	The Prime Ministers' Museum & Library (PMML) has decided that it will not permit future donors of Private Papers of eminent personalities to impose indefinite conditions on the declassification of such material.
Muting of mics in Parliament	Leader of Opposition in Lok Sabha claimed that his mic was muted during the debate.
Classical language status	Amid a demand for classical status for many languages, the Central government has decided to tweak the criteria for giving this special tag.
New provisions for police officers	Standard Operating Procedures have been issued by the Bureau of Police Research and Development (BPRD) to guide police officers in implementing the new provisions of new criminal laws.
Penal Colonies	A reporter for The Wall Street Journal, who was convicted of espionage in Russia was sent to a penal colony.
Governor's Immunity	The Supreme Court agreed to hear a plea to reexamine constitutional immunity enjoyed by the Governor of a state.
Money Bill	The Supreme Court agrees to hear challenges to the government's passage of several laws through the money bill route.

2. INTERNATIONAL RELATIONS

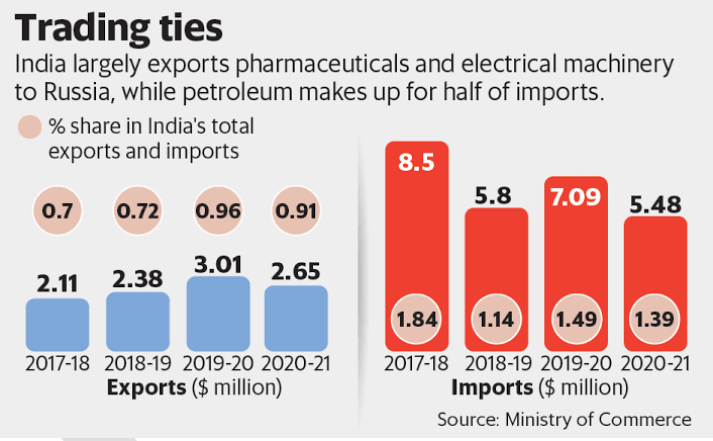
2.1 INDIA-RUSSIA TRADE GAP AND RISING POPULARITY OF YUAN

Context

- To curb its increasing oil import bill and reduce dependence on the expensive US dollar, **India aims to enhance bilateral trade with Moscow to $100 billion by 2030.**

Trade statistics

- Bilateral trade during **April 2020-March 2021 amounted to USD 8.1 billion only.**
- Russia has become **India's top oil supplier since the onset of the Ukraine war in 2022.**
- **Trade deficits in FY 2014:** $57 billion.
- **Volume of bilateral trade**: $66 billion in FY24.



How has India benefited from increased trade volume with Russia?

- India has **managed to save over $10 billion by importing cheaper Russian oil in the last two years** and has benefited from exporting petroleum products by processing Urals crude.

What does the low exports mean for India?

- Low exports to Russia mean that India has not been able to grasp the opportunity to cut dependence on the expensive US dollar.

Why is the widening trade gap with Russia benefiting the yuan?

- Unlike India, **China has seized the export opportunities emerging in Russia amid Western sanctions and a host of Western companies and banks exiting the war economy.**
- Chinese exports to Russia have grown faster than imports of Russian oil.
- As per Chinese customs data, **shipments to Russia jumped by 47 per cent year-on-year to $111 billion in 2023, while imports grew by 13 per cent to $129 billion.**
- **The two-way trade crossed a record $240 billion in 2023.**
- Due to a balanced trade between them compared to India-Russia trade, **the use of domestic currency has increased with 95 percent of trade between China and Russia occurring in domestic currency.**
- As a result, the yuan is the most sought-after currency in the Russian stock market, despite the popularity of the US dollar.

Steps Towards settlement of trade in rupee

Developments in GIFT City:

- **India's first operational greenfield smart city and international financial services centre** allows transactions in international currencies and promotes use of rupee in trade transactions.

Asian Clearing Union (ACU)

- The Asian Clearing Union (ACU) is a payment arrangement for settling trade transactions among member countries.
- **Established in 1974 by ten central banks of** Bangladesh, Bhutan, Iran, India, Maldives, Nepal, Pakistan, Sri Lanka, and Myanmar, **it now has 13 members, including India.**
- It is the initiative of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP).

Rupee Trade Settlements:

- In March 2023, the **Reserve Bank of India (RBI) implemented a system for rupee trade settlements with 18 countries.** Banks from these nations can open **Special Vostro Rupee Accounts (SVRAs)** to facilitate payments in Indian Rupees.

International Trade Settlement Guidelines:

- In July 2022, **the RBI announced guidelines for international trade settlements in Indian Rupees** and allowed external commercial borrowings in Rupees, particularly through **Masala Bonds.**

Why are exports to Russia challenging?

- **Fear of sanctions:** Reluctance of private banks to facilitate trade with Russia due to fears of Western sanctions as **most private banks have significant business interests in Western countries and multiple branches that could face sanctions imposed by the European Union (EU) and the US.**
- **Lack SOPs in rupee settlement:** Indian exporters are facing difficulties using the rupee settlement mechanism launched by RBI **as they were unable to use it due to the absence of a Standard Operating Procedure (SOP) for banks.**
- **Currency volatility:** The ruble and rupee, unlike the yuan, have experienced considerable volatility, complicating trade in domestic currency.
- **Payment Issues:** Due to sanctions, payment mechanisms was disrupted, complicating transactions and increasing reliance on alternative payment methods.
- **Rising Chinese influence and Changing stance of India:** In recent years India is accused of **tilting towards west due to recent engagements such as Quadrilateral Security Dialogue, Indo Pacific strategy, etc.** Russia-China dynamics also has grown through increased trade volume, increased military drills, etc.

Conclusion

- As both nations navigate their geopolitical landscapes, these collaborative efforts could pave the way for increased trade flows, diversified economic partnerships, and a more resilient bilateral relationship in the years to come.

2.2 FRENCH POLITICO-ELECTORAL VS INDIAN POLITICO-ELECTORAL SYSTEM

Context

- The first phase of the French elections was conducted after President Emmanuel Macron's sudden decision to dissolve parliament.

Comparative analysis of the electoral systems and processes between France and India

Aspect	France	India
Electoral System	• France uses a **two-round system** for legislative and presidential elections. • Candidates compete in constituencies in the first round. • If no candidate receives an absolute majority (more than 50%), a **second round** is held between the top two candidates. • The candidate with the most votes in the second round wins the seat.	• India uses a **First-Past-the-Post (FPTP) system for** both parliamentary (Lok Sabha) and state assembly elections. • Candidates contest individual constituencies, and the candidate with the highest number of votes wins the seat, regardless of whether they achieve an absolute majority.
Voting and Representation	• France employs a **mix of proportional representation and majority system** within constituencies. • Parties present lists of candidates in multi-member constituencies. • **Each party needs to surpass a minimum threshold (5% of the vote nationally) to qualify for seats.**	• **India's FPTP system** focuses on individual candidates rather than parties. • Voters choose a single candidate in their constituency, and the candidate with the highest number of votes wins the seat, even if they do not receive a majority of votes. • This system tends to favour larger parties and can lead to disproportionate representation of smaller parties.
Presidential Elections	• French presidential elections are also conducted using a **two-round system**.	• India does not have direct presidential elections. • The President of India is elected indirectly by an electoral college consisting of elected members of both houses of Parliament (Lok Sabha and Rajya Sabha) and elected members of state legislative assemblies.
Parliamentary Seats	• The French National Assembly (lower house of Parliament) has **577 seats**. • These include constituencies for **mainland France, French overseas territories, and representation for French citizens living abroad.** • A party or coalition needs to secure **289 seats** for an absolute majority.	• India's Lok Sabha (lower house of Parliament) has **543 seats** allocated to constituencies across states and union territories based on population. • The number of seats per state is determined by population size. States also have legislative assemblies with varying numbers of seats based on population. • A party or coalition needs to secure **272 seats** for an absolute majority in the Lok Sabha.
Political System	• France operates under a **semi-presidential system where** executive	• India follows a **parliamentary system** where the President is the ceremonial

	powers are shared between the President (elected separately) and the Prime Minister (appointed from the majority party or coalition in the National Assembly). • The President oversees foreign policy, defense, and national security, while the Prime Minister is responsible for domestic policy and day-to-day governance.	head of state. The Prime Minister is the head of government and holds executive powers. • The Prime Minister is appointed from the majority party or coalition in the Lok Sabha and is responsible for policy formulation and implementation.
Electoral Oversight	• Electoral processes in France are overseen by **independent authorities** to ensure fairness and transparency. • **The Constitutional Council** supervises the conduct of elections, verifies results, and settles electoral disputes. The Ministry of the Interior organizes elections and manages voter registration.	• In India, the **Election Commission of India (ECI)**is an autonomous constitutional authority responsible for administering and overseeing elections to Parliament, state legislatures, and the offices of the President and Vice President. • The ECI conducts free and fair elections, registers political parties, and enforces the model code of conduct during elections.

Note: The Constitution of India allows for a maximum of 550 members in the House, with 530 members representing the States and 20 representing the Union Territories. At present, the Lok Sabha has 543 seats filled by elected representatives.

2.3 SOUTH EAST ASIAN COUNTRIES AND BRICS

Context

- BRICS is attracting Southeast Asian Countries, with Thailand and Malaysia being the latest to express their interest in joining the bloc.

Reason for SE Asian countries to join BRICS

- **Strategic Benefits:** BRICS could elevate Thailand and Malaysia as middle powers, providing a platform for broader international influence and economic growth through expanded trade.
- **Economic advantage:** There are potential benefits for Thailand and Malaysia economies, particularly in digital sectors and key industries like services, manufacturing, and agriculture.
- **Geopolitical Dynamics:** The nations showing interests already have strong trade ties with China, a major BRICS member, which could further enhance through membership.
- **Global collaboration:** The interested countries see BRICS as a means to strengthen its neutral stance while fostering collaboration with multiple global partners.
- **Balancing act:** Indonesia considered BRICS membership but opted to prioritize OECD accession, highlighting Southeast Asia's strategic balancing act between Western and emerging economies.
- **Membership Expansion:** BRICS recently decided to expand its membership **beyond its original members (Brazil, Russia, India, China, South Africa). On 1 January 2024, BRICS –**

the intergovernmental organisation comprising Brazil, Russia, India, China and South Africa – admitted four new members: Egypt, Ethiopia, Iran and the United Arab Emirates. This move underscores BRICS' global reach and potential as a significant economic bloc.

Challenges in the expansion of BRICS members

- **Maintaining Cohesion and Consensus:** As BRICS expands, **maintaining cohesion and consensus** among a more diverse group is a challenge. Different countries have varying interests, priorities, and geopolitical alignments, which can complicate decision-making and collective action within BRICS.
- **Strategic Alignment:** New members may have different **geopolitical goals and alliances outside of the BRICS framework,** which could potentially create divergent interests and hinder the group's ability to present a unified front on global issues.
- **Institutional Capacity and Governance:** BRICS may face challenges in scaling its institutional capacity such as **New Development Bank (NDB)** to accommodate new members effectively.
- **Integration and Coordination:** Integrating new members into existing **BRICS mechanisms** and coordinating policies across a larger and more diverse group pose logi**stical and diplomatic challenges.**
- **Balance of Power and Leadership Dynamics:** The expansion could potentially alter the balance of power and leadership dynamics within BRICS. **Existing members, particularly China and India, may seek to maintain their influence and leadership positions,** while new members may aspire to assert their own agendas and priorities within the group.

Way ahead

- **Enhance Institutional Capacity:** Strengthen the capacity of existing BRICS institutions like the New Development Bank (NDB) to accommodate new members. This includes **increasing capitalization, improving governance structures, and streamlining decision-making processes to ensure equitable participation and efficient operation.**
- **Establish Clear Criteria for Membership:** Develop transparent criteria and guidelines which include criteria related to economic size, geopolitical alignment, commitment to BRICS principles, and potential contributions to the group's objectives.
- **Promote Dialogue and Consensus-Building:** Organise regular dialogue and consensus-building among BRICS members, both existing and new, on key issues and strategic priorities.
- **Enhance Strategic Coordination: Strengthen strategic coordination** among BRICS including aligning policies on global governance reform, sustainable development, energy security, and technology transfer to maximise collective impact on the global stage.
- **Diversify Partnerships and Engagement:** Expand outreach and engagement with non-BRICS countries and regional blocs to enhance cooperation and build alliances.

Conclusion

- Thailand and Malaysia's interest in joining **BRICS underscores the bloc's appeal as a platform for economic growth,** global influence, and strategic partnerships, reflecting Southeast Asia's evolving diplomatic and economic strategies.

APTI PLUS

2.4 LEFT-WING, CENTRIST, AND RIGHT-WING POLITICAL IDEOLOGIES

Context

- The New Popular Front (NFP) coalition of left-wing parties has won the most seats (188) in the 577-member lower house of parliament in France, giving an unexpected blow to the far right National Rally (RN).

Aspect	Left Wing	Centrist	Right Wing
Definition	Typically represents political parties and ideologies that **lean towards socialism, secularism, and advocating for the rights of workers and marginalized communities.** **Ex.** Communist Party of India (CPI), Communist Party of India (Marxist) [CPI(M)], and other regional communist parties.	It **seeks to balance moderate policies from both left-wing and right-wing ideologies. Centrism typically emphasizes:** **Moderation:** Advocates for balanced policies that incorporate elements from both left and right-wing perspectives. **Pragmatism:** Focuses on practical solutions rather than ideological extremes. **Compromise:** Supports consensus-building and cooperation across political divides. **Social Inclusivity:** Values inclusivity, social justice, and sometimes environmental sustainability. Ex. Nationalist Congress Party (NCP), JDU, Democratic Party (USA), etc.	Typically **emphasizes conservatism, nationalism, traditional values, and a free-market economic approach.** Ex. Bharatiya Janata Party (BJP), the Rashtriya Swayamsevak Sangh (RSS), and various other affiliated organizations.
Economic Policy	Supports wealth **redistribution**, higher taxes on the wealthy, social welfare programs, and government intervention in the economy.	Favors moderate economic policies, balancing market forces with government regulation. **Supports fiscal responsibility** and may endorse some welfare programs.	Advocates for free market **capitalism, lower taxes, limited government intervention, and deregulation.** Emphasizes individual responsibility and entrepreneurship.

Social Policy	Advocates for social equality, supports progressive social reforms **(e.g., LGBTQ+ rights, environmental protections),** and emphasizes inclusivity. **Ex. legalization of same-sex marriage in many European countries.**	Takes a pragmatic approach to social issues, supporting moderate reforms while prioritizing consensus-building and social stability.	Often supports traditional social values, opposes progressive reforms, and emphasizes national identity, cultural preservation, and law and order.
Foreign Policy	Focuses on diplomacy, international cooperation, human rights, and multilateralism. Often critical of military intervention and supports global solidarity.	Prioritizes pragmatic diplomacy, balancing national interests with international cooperation. May support military intervention in specific cases and favors alliances based on national interest.	Emphasizes national sovereignty, military strength, and protectionism. May advocate for assertive foreign policies, including military intervention to protect national interests. Ex The foreign policy of Russia under Putin.
Role of Government	Sees government as a **key actor in addressing social and economic inequalities. Supports robust public services and infrastructure investment. Ex. welfare state model in Norway.**	Views government as a **mediator between competing interests, supporting policies that maintain social stability and economic growth.**	Advocates for **limited government involvement in economic and social affairs.** Supports reducing government size and intervention to maximize individual liberty and free market efficiency.
Immigration Policy	Supports liberal immigration policies, including pathways to citizenship and refugee rights. Advocates for multiculturalism and diversity.	Takes a pragmatic approach to immigration, balancing humanitarian concerns with national security. Supports controlled immigration policies and integration of migrants.	Favors restrictive immigration policies, emphasizing border security, deportation of illegal immigrants, and cultural assimilation.

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View on Globalization	Supports globalization as a means to promote international solidarity, economic development, and cultural exchange. Critiques its impacts on labor rights and inequality. **Ex. anti-globalization movements in Latin America.**	Embraces globalization for economic growth and access to international markets. Sees it as a tool for global stability and peace. **Ex. Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).**	Skeptical of globalization's benefits, focusing on protecting national sovereignty, jobs, and cultural identity from external influences. Critiques its impact on domestic industries and jobs. **Ex. protectionist policies in the United States like America First.**

2.5 NEW PRESIDENT IN IRAN

Context

- The new president elect in Iran has many challenges ahead.

Challenges Ahead for the new president elect

US Sanctions and Relations with the West:

- Iran has faced severe economic hardships due to **US sanctions imposed since 1979, affecting sectors like oil exports and banking.**
- However he aims to negotiate with Western powers to lift sanctions, which have significantly impacted Iran's economy.

Iran's Nuclear Program:

- Challenges include international concerns over **Iran's enrichment of uranium beyond JCPOA limits and its stockpile of enriched uranium.**
- Efforts to revive the JCPOA face opposition internally, particularly from the Islamic Revolutionary Guard Corps (IRGC).

Economic Reforms and Inflation:

- **Iran's inflation rate for 2023 was 43.49%. Addressing high inflation rates and unemployment requires substantial economic reforms, including tackling corruption and improving economic management.**

Women's Rights and Social Policies:

- Public outcry over social restrictions, aided by protests following the death of Mahsa Amini, highlights challenges in promoting greater personal freedoms.
- Note: Mahsa Amini was an Iranian woman whose arrest in Tehran for opposing mandatory hijab and subsequent death in police custody sparked a wave of protests throughout Iran.
- President elect supports reforms to advance women's rights, particularly concerning dress codes and social participation.

Rights of Kurds and Minorities:

- Commitment to improving economic conditions and cultural rights of Iranian Kurds and other minority groups.
- He advocates for integrating Kurdish language and protecting cultural rights in education and public policy.

What India can expect from Iran's new President-elect, Masoud Pezeshkian

- **Economic Opportunities:** New president elect aims to lift US sanctions, potentially restoring India-Iran trade relations, especially in oil and expanding economic ties. India might expect favourable terms for oil trade.
- **Cultural and Educational Exchanges:** Expect initiatives to boost cultural ties and educational collaborations, potentially

including Persian language programs in Indian universities.

- **Regional Stability:** Pezeshkian's stance on regional stability may influence Iran's approach towards **India-China relations, potentially affecting dynamics in South Asia. India could expect Iran playing a role in mitigating tensions or promoting dialogue between India and China.**
- **Broader connectivity: Iran under the new president is likely to support regional stability efforts, impacting areas like Afghanistan where India has interests.** Continued support and maintenance of the **Zaranj-Delaram Highway could be expected under the new president, benefiting India's connectivity initiatives in Afghanistan.**
- **Nuclear Deal Restoration:** New president seeks to revive the 2015 nuclear deal, which could stabilise the region and influence India's strategic calculations.
- **Counterterrorism Cooperation:** Continued cooperation in counterterrorism efforts, enhancing intelligence sharing and joint actions against common threats.

Conclusion

- New president elect's views represent a shift towards reformist policies aimed at enhancing civil liberties, promoting gender equality, revitalising Iran's economy, and restoring international relations. However, achieving these goals will face significant challenges from conservative factions and international pressures, particularly regarding Iran's nuclear program and economic sanctions.

2.6 INDIA UAE DEFENSE RELATIONS

Context

- 12th Joint Defence Cooperation Committee meeting between India & UAE held in Abu Dhabi to strengthen bilateral defense & security ties.

The India-UAE JDCC:

- It was established in 2006.
- Since then, 11 rounds have been held.
- The 12th meeting provided an opportunity to further augment India's defense and security relations with the UAE, strengthening the Comprehensive Strategic Partnership between the two countries.

Details

- During the meeting, the **two sides discussed a wide range of opportunities for collaboration to further strengthen defense and security cooperation between the two countries.**
- Detailed **discussions were held in areas such as training, joint military exercises, defense industrial cooperation, subject matter expert exchange, R&D etc.**
- Both sides **deliberated on the regional security situation, including maritime security, and underscored the need to enhance collaboration to tackle the security challenges.**

India UAE defense relations

Bilateral Defense Cooperation:

- India and UAE have seen a steady growth in their defense cooperation, paralleling their overall bilateral relations.
- This cooperation **includes high-level exchanges among Service Chiefs, functional level exchanges, and military education exchanges.**
- **Regular port calls by naval ships from both countries** contribute to enhancing bilateral defense cooperation.

Annual Defence Dialogue:

- **An Annual Defence Dialogue** is conducted between India and UAE to discuss security and defense cooperation issues.
- This dialogue serves as a platform to strategize and plan further cooperation initiatives.

Institutional Framework:

- Defense cooperation is managed through a **Joint Defence Cooperation Committee (JDCC) at the Ministry level.**
- **Naval Staff Talks at the HQ level focus on identifying new areas of cooperation between the two nations.**
- **A permanent Defence Adviser (DA)** was appointed in March 2013, strengthening defence ties, especially in training and exchange programs.

Specific Instances of Cooperation:

- In 2016, the Indian Air Force (IAF) engaged in a bilateral exercise with UAE counterparts.
- UAE Air Force Officers participated as **Observers in a Trilateral Air Exercise on Humanitarian Assistance & Disaster Relief (HADR) theme in 2018.**
- The maiden IN-UAE Bilateral Exercise named Gulf Star 1 took place in March 2018 involving Indian Navy ships.
- **Indian Navy and Coast Guard vessels frequently make port calls to Abu Dhabi and Dubai, enhancing mutual cooperation.**
- Indian participation in IDEX/NAVDEX in Abu Dhabi biennially underscores continued bilateral engagement.

High-Level Visits and Exchanges:

- Several high-profile visits have occurred, including delegations from **UAE to DefExpo 2018 and Aero India 2019 in India.**
- The first Indian pavilion at Dubai Airshow featured participation from HAL, DRDO, and BDL, representing India's defense industry.

Additional Engagements:

- Both countries exchange delegations to each other's Centres of Excellence, fostering deeper cooperation in specialized areas.

Conclusion

- The India UAE defense cooperation in recent years highlights a robust and growing partnership in defense between India and UAE, spanning high-level dialogues, joint exercises, educational exchanges, and mutual visits, all contributing to strengthen bilateral relations in defense and security sectors.

2.7 ICCPR AND ITS FOURTH REVIEW

Context

- India successfully concluded its **fourth periodic review by the UN Human Rights Committee under the International Covenant on Civil and Political Rights (ICCPR) in Geneva.**

About Fourth periodic review of International Covenant on Civil and Political Rights (ICCPR)

- **Venue:** UN Office at Geneva, Switzerland.
- The Human Rights Committee reviewed the implementation of the ICCPR, and made observations and recommendations.

Reporting process

- States must report one year after acceding to the Covenant and then whenever the Committee requests (usually every four years).

The International Covenant on Civil and Political Rights (ICCPR)

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- It is a **multilateral treaty that commits nations to respect the civil and political rights of individuals, including the right to life, freedom of religion, freedom of speech, freedom of assembly, electoral rights and rights to due process and a fair trial.**
- **Forms part of the International Bill of Human Rights, along with the International Covenant on Economic, Social and Cultural Rights(ICESCR) and the Universal Declaration of Human Rights (UDHR).**
- **Adoption:** Adopted by United Nations General Assembly Resolution 2200A (XXI) on 16 December 1966 and entered into force on 23 March 1976 after its thirty-fifth ratification or accession.
- **Members:** As of June 2024, the Covenant has 174 parties and six more signatories without ratification, most notably the People's Republic of China and Cuba;

India and ICCPR

- India became a party to the ICCPR in 1979 and has undergone three such reviews so far, the last being in 1997.

The International Covenant on Economic, Social and Cultural Rights (ICESCR)

- It is a multilateral treaty **adopted by the United Nations General Assembly (GA) on 16 December 1966 through GA Resolution 2200A (XXI), and came into force on 3 January 1976.**
- It commits its parties to work toward the granting of economic, social, and cultural rights (ESCR) to all individuals including those living in Non-Self-Governing and Trust Territories.
- **Parties:** As of February 2024, the Covenant has 172 parties and four countries, including the United States, have signed but not ratified the Covenant.
- **Monitoring:** The Covenant is monitored by the UN Committee on Economic, Social and Cultural Rights.

Universal Declaration of Human Rights (UDHR)

- It is a document adopted by the **United Nations General Assembly in 1948 that guarantees equal rights to all individuals and prohibits discrimination.** The UDHR includes civil, political, economic, social, and cultural rights:
  - **Civil and political rights:** The right to life, liberty, free speech, and privacy
  - **Economic, social, and cultural rights:** The right to social security, health, and education.

2.8 MERCOSUR

Context

- Bolivia joined as the full time member of MERCOSUR(Southern Common Market)

About

- It is a trading bloc of South America.
- Modeled on the lines of the European Union.
- It is the fourth-largest integrated market after the European Union (EU)

Formation

- It was **formed in 1991 with the objective of free movement of goods, services, capital and people and it became a customs union in January 1995.**
- **It is now pursuing the third stage of its integration 'Common Market'.**

Headquarters

- Montevideo (Uruguay)

AIM

- Free movement of Goods, Services, Capital and People.

Members

- Brazil, Argentina, Uruguay and Paraguay being the founding members, Venezuela joining Mercosur in 2012. Bolivia is a new member now.(Venezuela was suspended from membership in 2016). New Zealand and Mexico are observer countries.

India - MERCOSUR relations

Preferential Trade Agreement

- The negotiations on the Preferential Trade Agreement (PTA) were concluded in March 2005 and the agreement has become operational since June 2009.
- Preferential duty (10-20 % in most cases) is given to 450 Indian products entering MERCOSUR and reciprocal concession to 450 products of MERCOSUR entering India.

Trade volume:

- India's trade with MERCOSUR for 2021 was **15.2 billion US dollars accounting for 60% of India's total trade with Latin America. Today this value has crossed 40 Billion USD.**
- **India's imports:** mainly included crude oil from Venezuela and soya from the region.
- **The major products of export:** Meat and meat products, organic & inorganic chemicals, dyes & pigments, raw hides and skins, leather articles, wool, cotton yarn, glass and glassware, articles of iron and steel, machinery items, electrical machinery and equipments, optical, photographic & cinematographic apparatus.

Conclusion

- The full membership of Bolivia in MERCOSUR holds promise for greater economic integration, increased trade, and heightened Latin American regionalism. However, the foreseen challenges will need to be addressed by Bolivia to fully benefit from the opportunities presented by joining the bloc. For the ease of regulatory alignment, **it is imperative for Bolivia to align its regulations and standards with those of MERCOSUR. It would necessitate significant technical and policy modifications within the domestic domain.**

2.9 U.K.-INDIA TECHNOLOGY SECURITY INITIATIVE

Context

- Indians and the United Kingdom launched the U.K.-India Technology Security Initiative.

About the U.K.-India Technology Security Initiative

- Initiative is aimed at ensuring telecommunications security.
- The agreement was "**spearheaded**" by the National Security Advisors of the U.K. and India.

- The collaboration will include government, the private sector, academia and research and development institutions.

UK-India Relations

Strategic partnership

- In 2021, both the countries **agreed to a new and transformational India-UK 'Comprehensive Strategic Partnership' and an ambitious India-UK Roadmap 2030 to steer cooperation for the next ten years.**

VVIP engagements

- VVIP engagements are frequent between the countries. Ex. In November 2021, **Prime Ministers jointly launched the ambitious 'One Sun, One World, One Grid' (OSOWOG) programme and the Infrastructure for Resilient Island States (IRIS).**
- The OSOWOG is a part of the International Solar Alliance (ISA); and the IRIS is a part of the Coalition for Disaster Resilient Infrastructure (CDRI).

Economic, Trade and Financial cooperation

Trade

- **Bilateral trade (both goods and services); £36.3 billion during the year FY 2022/23, an increase of 34.2% or £9.2 billion from 2021/22.** India's **total imports from the UK; £14.7 billion. India's total exports to the UK: £21.6 billion.**
- **India was the UK's 12th largest trading partner in this period accounting for 2.1% of UK's total trade.**

Investments

- **India invested in 118 projects and created 8,384 new jobs in the UK** to retain the position of second-largest source of foreign direct investment (FDI) after the US, as per Business and Trade (DBT) inward investment statistics for 2022-2023.
- **UK is the 6th largest inward investor in India,** with a cumulative equity investment of US $ 33.88 billion (April 2000 - March 2023), accounting for around 5.34 % of all foreign direct investment into India.

Defence and Security cooperation

Joint Exercises and visits

- **Ex Ajeya Warrior:** - This India-UK bilateral exercise is conducted **biennially at company group level alternatively in India and UK.**
- **Exercise Konkan: Konkan is an annual bilateral exercise conducted between IN and RN(Indian Navy and Royal Navy).** Exercise Konkan 2023 edition was held from 20-22 March 2023 in the Arabian Sea off the Konkan Coast.
- **Ex Cobra Warrior- 2023:** Indian Air Force (IAF) participated in a multi-national air exercise Cobra Warrior 23 at RAF Waddington, UK from 01-27 March 2023. Other participants in the exercise were the USA, Saudi Arabia, Finland and Belgium.

Institutional mechanisms

- **Defence Consultative Group meeting (DCG):** DCG is held at the level of Defence Secretary and the UK counterpart.
- **Counter Terrorism Dialogue:** The 15th India-UK CT Dialogue was held in London on 4-5 April 2022.

Science & Technology, Research & Innovation

Institutional mechanisms

- **Science and Innovation Council (SIC):** Science and Innovation Council (SIC), is **apex body to review overall bilateral scientific cooperation (except strategic sector) between two countries and it is held once in two years alternatively in India and the UK.**

Education and students

- **Since 2015-16, the number of first year enrolment of Indian students in the UK Universities have been increasing.** India and UK signed a Mutual Recognition of Academic Qualifications Memorandum of Understanding on 21 July 2022.

Health

- **The joint research and development of the COVID-19 vaccine, under a licensing agreement between UK-based AstraZeneca and Serum Institute of India,** is an unprecedented example of India-UK cooperation in addressing global issues of concern.

People to people exchanges

- India and UK signed the **Migration and Mobility Partnership (MMP) Agreement on 4 May 2021 with the intention to address swifter movement of working professionals between the two countries.**
- The UK has a **large Indian diaspora of 1.864 million as per the 2021 Census and forms 3.1% of the total population of the UK, which is 59.597 million.**
- **The House of Commons currently boasts 16 members of Indian origin, and there are 23 peers of Indian origin in the House of Lords.**
- As per the report 'India in the UK: **The diaspora effect' prepared by Grant Thornton and FICCI, there are over 65,000 companies owned by Indian diaspora.**

2.10 WORLD BANK GROUP GUARANTEE PLATFORM

Context

- The World Bank Group (WBG) guarantee platform is open for business from today.

World Bank Group Guarantee Platform

- It was initiated in July 2024.
- The platform is housed at the **Multilateral Investment Guarantee Agency (MIGA).**
- It brings together products and experts from the **World Bank, International Finance Corporation (IFC), and MIGA for simplicity, efficiency, and speed.**
- It **aims to boost WBG annual guarantee issuance to $20 billion by 2030.**
- It will serve as a one-stop-shop for all WBG guarantee business, providing the best guarantee solutions for clients to meet project needs and development priorities.
- WBG clients can now choose from a simplified market-friendly menu of guarantee options.

Types of coverages

The platform will provide three types of coverages:

1. credit guarantees for loans to the public or private sector;
2. trade finance guarantees for trade finance projects involving public entities; and
3. political risk insurance against non-commercial risks for private sector projects or public-private partnerships.

Purpose and Function of Guarantees

- Guarantees were designed to facilitate private financing by mitigating the risk of default on debt service by borrowers due to a host government's failure to meet contractual obligations.

Significance of the initiative

- **Scalable model:** The new platform introduces a scalable model, prioritizing high-impact projects, thereby optimizing resource allocation, and facilitating growth.
- **Impactful solutions:** Using the collective expertise of the WBG, the **platform will drive impactful solutions across diverse sectors, including energy access, preparedness, and climate action.**
- **Financing:** In fiscal year 2024, the **World Bank Group issued approximately $10.3 billion in new guarantees using products that will be part of the platform: $8.2 billion from MIGA, $1.4 billion from IFC, and nearly $700 million from the World Bank.**

Evolution of Guarantee Programs

- **B-loan Program (1983):** Introduced to allow commercial lenders to co-finance projects by purchasing participations in World Bank loans.
- **Expanded Co-financing Operations Program (1988):** Replaced the B-loan program, focusing on partial guarantees to mobilize private finance for public and joint projects.
- **Private Sector Projects (1991):** Guarantees expanded to support commercial financings for private sector projects, reflecting a global shift towards private involvement in infrastructure.

Types of Guarantees Established

- **Partial Risk Guarantees (1994):** Protect private lenders against defaults caused by a government's failure to meet specific project contract obligations. Available to both IBRD-eligible and IDA countries.
- **Partial Credit Guarantees:** Introduced to protect against debt service defaults on public sector project loans, irrespective of the cause. Available only to IBRD-eligible countries.

2.11 SHORT ARTICLES

High-Level Political Forum (HLPF) on Sustainable Development

Context

- **The solutions offered by indigenous tribal communities in Rajasthan to global challenges, were highlighted at the High-Level Political Forum (HLPF) on Sustainable Development**, 2024.

About

- It is a subdivision of both the United Nations General Assembly and the United Nations Economic and Social Council and is responsible for the entire organization's policy on sustainable development.
- The Forum replaced the Commission on Sustainable Development on the 24 September 2013

Headquarter

- New York, USA

2024 High-Level Political Forum (HLPF) on Sustainable Development

- Venue: United Nations headquarters in New York.
- Held under the auspices of the U.N. Economic and Social Council (ECOSOC).
- Theme: 'Reinforcing the 2030 agenda and eradicating poverty in times of multiple crises: The effective delivery of sustainable, resilient and innovative solutions'.

Role

- It adopts negotiated declarations, reviews commitment and the progress of the 2030 Agenda for Sustainable Development (the 17 Sustainable Development Goals, SDGs or Global Goals).

Meeting

As the Forum is held under the authority of both the Economic and Social Council And the General Assembly, the body hosts two different types of meetings:

- While under the auspices of the General Assembly: Once every four years at the level of Heads of State and Government for a period of two days.
- While under the auspices of the Economic and Social Council: Yearly, for a period of eight days, including a three-day ministerial segment.

International Mathematical Olympiad (IMO)

Context

- In its best performance since 1989 when the International Mathematical Olympiad (IMO) began, the Indian team created history in the event recently.

About

- **It is the World Championship Mathematics Competition for High School students and is held annually in a different country.**
- The first IMO was held in 1959 in Romania, with 7 countries participating.
- It has gradually expanded to over 100 countries from 5 continents.

Venue

- Bath, United Kingdom (UK)

India's Team

- The six-member team, led by Professor Krishnan Sivasubramanian of the Department of Mathematics at IIT-Bombay.
- **The Homi Bhabha Centre for Science Education (HBCSE) – Tata Institute of Fundamental Research (TIFR) is a nodal center in india for training and selecting students for international Olympiads.**

India's medal tally

- **India won four gold medals, a silver medal and an honorable mention.**
- Good Medalists: The team had Adhitya Mangudy Venkata Ganesh from Pune and Rushil Mathur from Mumbai, Ananda Bhaduri from Guwahati, Assam, and Kanav Talwar from Noida, Uttar Pradesh
- Other awards Arjun Gupta from Delhi won silver medal and Siddharth Choppara from Pune won honourable mention.
- **The Indian team's rank is 4 out of 108 participating countries.**
- **Before this, the team recorded its best performance with rank 7 in 2001 and 1998.**

What are international Olympiads?

- **They Are a group of worldwide annual competitions in various areas of the formal sciences, natural sciences, and social sciences.**
- The competitions are designed for **the 4-6 best high school students from each participating country** selected through internal National Science Olympiads.
- **Exceptions: International linguistics Olympiad , which allows two teams per country; the IOI(International Olympiad informatics), which allows two teams from the hosting country; and the IJSO(International Junior School Olympiad) , which is designed for junior secondary students.**

There are 12 commonly recognized International Science Olympiads

#	Science	Symbol	Year	Host Country (For 2023)	Host Country (For 2024)
1	International Mathematical Olympiad	IMO	since 1959	Japan	United Kingdom
2	International Physics Olympiad	IPhO	since 1967	Japan	Iran
3	International Chemistry Olympiad	IChO	since 1968	Switzerland	Saudi Arabia
4	International Olympiad in Informatics	IOI	since 1989	Hungary	Egypt
5	International Biology Olympiad	IBO	since 1990	UAE	Kazakhstan
6	International Philosophy Olympiad	IPO	since 1993	Greece	Finland
7	International Astronomy Olympiad	IAO	since 1996	China	
8	International Geography Olympiad	iGeo	since 1996	Indonesia	Ireland
9	International Linguistics Olympiad	IOL	since 2003	Bulgaria	Brazil
10	International Junior Science Olympiad	IJSO	since 2004	Thailand	Romania
11	International Earth Science Olympiad	IESO	since 2007	Online	China
12	International Olympiad on Astronomy and Astrophysics	IOAA	since 2007	Poland	Brazil

Australia-India Strategic Research Fund

Context

- Five projects have been awarded funding in the 15th round of the Australia-India Strategic Research Fund (AISRF).

About AISRF

- The Australia-India Strategic Research Fund (AISRF) is **a platform for bilateral collaboration in science, jointly managed and funded by the governments of India and Australia.**

Objectives:

- to increase the uptake of leading-edge science and technology (S&T) by supporting collaboration between Australian and Indian researchers in strategically focused, leading-edge scientific research and technology projects,
- strengthening strategic alliances between Australian and Indian researchers; and
- facilitating India's and Australia's access to the global S&T system.

Focus Areas of Funding in 15th Round

- Creating AI-driven platforms for monitoring soil carbon sequestration.
- Eco-friendly recovery of essential metals from obsolete mobile devices.
- Cost-effective solar thermal desalination using nanomaterials.
- Harnessing the immune system to combat antimicrobial resistance.
- Advanced diagnostics and therapeutics for microbial infections.

Indian Recipients

- The Indian recipients include prestigious institutions such as the **Punjab Remote Sensing Centre, IIT Delhi, IIT Bombay, IISc Bangalore, and AbGenics Life Sciences Pvt. Ltd. Pune.**

Selection Process and Criteria

- Projects were selected through a rigorous evaluation process to ensure scientific excellence and potential for significant impact.
- Emphasis was placed on projects that could provide valuable insights and solutions benefiting both countries and the global community.
- Significance of Selected Projects:
- The projects reflect cutting-edge research conducted jointly by Australian and Indian scientists.
- They are expected to contribute to scientific discoveries and technological advancements in areas of mutual interest.

European Commission

Context

- The Prime Minister Shri Narendra Modi congratulated Ursula von der Leyen on being re-elected as the President of the European Commission.

About

- European Commission (EC) is the executive body of the European Union (EU). It's responsible for representing the EU's common interests.

Headquarters

- Brussels, Belgium

Roles

- **Proposing new laws and policies:** The EC uses its "right of initiative" to of the EU.
- **Managing the EU budget:** The EC manages the day-to-day business of implementing EU policies and spending EU funds.
- **Ensuring correct application of EU laws and policies:** The EC ensures that EU policies and laws are correctly applied across Member States.
- **Negotiating international agreements:** The EC negotiates international agreements on behalf of the EU.

Composition

- The EC is led by a President and 27 Commissioners, known as "the College", who together make decisions on the Commission's political and strategic direction.

Appointment process

- The candidate is put forward by national leaders in the European Council, taking account of the results of the European Parliament elections. He or she needs the support of a majority of members of the European Parliament in order to be elected.

Tenure

- A new College of Commissioners is appointed every five years.

2.12 IMPORTANT ARTICLES

Topic	Context
PM's visit to Austria	The Prime Minister of India visited Austria making it the first visit by an Indian Prime Minister to Austria in 41 years.
Order of Saint Andrew the Apostle	The Prime Minister of India was awarded Russia's highest civilian honour, the Order of Saint Andrew the Apostle, during his visit to the country.
BIMSTEC Foreign Ministers' Meet	The External Affairs Minister of India hosted his counterparts for the 2nd BIMSTEC Foreign Ministers' Retreat in New Delhi on 11-12 July 2024.
Rwanda plan	Prime Minister Keir Starmer, upon taking office, immediately scrapped the Rwanda plan
MRA between India and Taiwan	The Mutual Recognition Agreement (MRA) for organic products between India and Taiwan has been implemented w.e.f. 8th July 2024.
Quad meet	Quad foreign ministers' meeting was **held in Tokyo, Japan** and reaffirmed their commitment, common principles, and capacities to preserve and strengthen the international order for the global good.

3. ECONOMY

3.1 SHORT ARTICLES

Datapoint: RBI Data on Employment Growth

Context: Employment Growth

- The **Reserve Bank of India (RBI)** reported a significant rise in **employment growth** in the fiscal year **2023-24**.
- Employment growth increased by nearly **6%** in FY2024, compared to a **3.2% rise** in FY2023.
- Approximately **4.67 crore jobs** were added, bringing the total workforce to **64.33 crore** in FY2024 from **59.67 crore** in FY2023.

Historical Employment Growth

- Since FY2021, India has added **7.8 crore jobs**.
- The **employment growth rate** was **5.1% in FY2021**.
- The **employment growth rate** stood at **3.3% in FY2022**.

Latest PLFS Report

Decline in Unemployment Rate

- Quarterly bulletin of **Annual Report Periodic Labour Force Survey (PLFS) was** released in May 2024 by the **Ministry of Statistics and Programme Implementation (MoSPI)**.
- **Unemployment rate** in **urban areas** decreased from **6.8% in January – March 2023** to **6.7% in January – March 2024** for individuals aged **15 years and above**.
- **Female unemployment rate** declined from **9.2%** to **8.5%** during the same period.

Labour Force Participation and Worker Population Ratio

- **Labour Force Participation Rate (LFPR)** in urban areas increased from **48.5% in January – March 2023** to **50.2% in January – March 2024** for those aged **15 years and above**.
- **Worker Population Ratio (WPR)** for the same age group rose from **45.2%** to **46.9%** during this period.

Expanded Scope of Electric Vehicle Policy

Context

- The Indian government has **expanded** its **electric vehicle (EV) policy**, originally announced in March 2024, to include a **retrospective effect**.

Details

- This policy, which **encourages global players** to **localize production** and **invest in the domestic ecosystem**, now benefits entities that have already made their investments.
- Previously, **incentives** were available only to entities that established local facilities **within three years of receiving approval.**

Focus of the Policy

The policy announced in March has a dual focus:

- **Investment and Localization:** The policy aims to provide Indian consumers with access to the latest **EV technology** and strengthen the **EV ecosystem** by fostering **competition among EV players**. The goal is to achieve higher **production volumes**, **economies of scale**, and **lower production costs**, benefiting Indian consumers and making the ecosystem commercially viable.

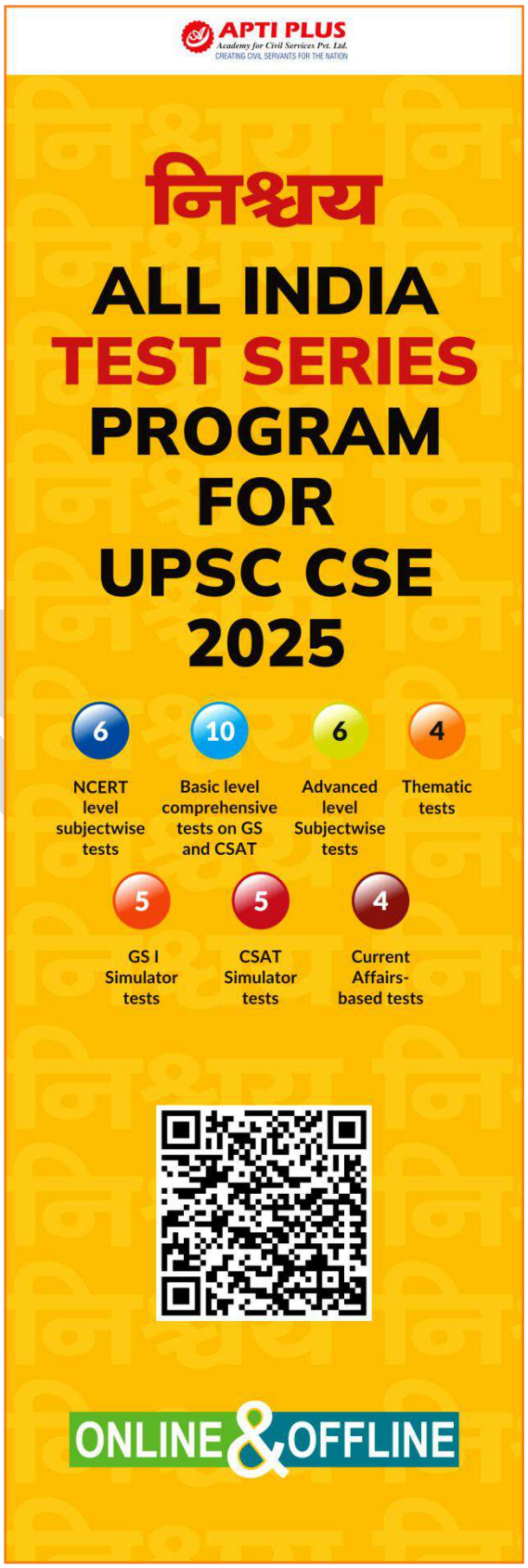
- **Domestic Value Addition:** The policy mandates that 50% of the **value addition in manufacturing** occurs domestically within five years. To support commercial viability, the **import duty** on EVs as **completely built units (CBUs)** with a minimum **CIF value** of $35,000 is reduced from 70%-100% to 15%. This policy recognizes India's potential to lead the global shift from **internal combustion engines (ICE)** to **decarbonized electric vehicles**.

Need for Investment and Intervention

- According to a **NITI Aayog Report**, purchasing a vehicle is a significant investment decision for many Indian consumers.
- Ensuring **viable ownership economics**, including **maintenance** and **running costs**, is crucial.
- The report highlights India's **structural unit cost disadvantages** in producing certain cell components, such as **CAM NMC** and **electrolytes**, which are 8-10% and 2-3% higher, respectively.
- Some cell components require substantial **capital investment**, about $200-500 million for a 20-30 GWh plant. The report recommends creating an enabling **ecosystem** to attract large-scale investments.
- **After-sales service** is another important aspect. **Bain & Company's India EV Report (2023)** identifies after-sales service as a significant pain point for EV customers, particularly in the two-wheeler segment.
- The report expresses concerns about the **scalability** of business models relying on **OEMs** partnering with **standalone service providers**.
- It also emphasizes the need for significant **investor support** to realize the $100 billion-plus EV opportunity.
- Investors should assess potential assets based on **sustainable competitive advantages**, **market capabilities**, **customer feedback**, **talent and culture**, and **manufacturing strategies**.

Addressing the Paradigm

- India's EV policy aligns with strategies in the **U.S.**, **China**, and **Europe**, where incentives are provided on a case-by-case basis for setting up **EV value chain manufacturing**.
- These incentives include **land** and **infrastructure support**, **capital subsidies**, **financing**, **fiscal incentives**,



and **subsidized utilities**. However, the **International Energy Agency (IEA)'s Global EV Outlook for 2024** notes that electric cars remain 10% to 50% more expensive than **combustion engine vehicles** in Europe and the U.S., depending on the country and car segment.

- Europe and the U.S. import 20% and 30% of their **EV battery needs**, highlighting the need for integrated **production lines**.

A new perspective

- Foreign investments often fall short of delivering expected outcomes.
- Policies should focus on building a **core manufacturing base** in India, ensuring that **critical components are produced locally, technology is transferred, and domestic manufacturing capabilities are developed.**
- If **FDI** does not contribute to building a core manufacturing base, India risks remaining a peripheral player in the global supply chain.
- **Strengthening domestic players and integrating them with foreign automakers' supply networks** is essential for India's progress in the EV sector.

Liberalised Remittance Scheme (LRS)

Context

- The Reserve Bank of India (RBI) has updated its policy **to permit resident individuals to open Foreign Currency Accounts (FCA) in International Financial Services Centres (IFSCs) at GIFT City, Gujarat.**

Details

- This move, part of the Liberalised Remittance Scheme (LRS), will now enable residents to engage in a broader range of transactions and investments within IFSCs, including those related to financial services and products, as per the **International Financial Services Centres Authority Act, 2019.**

What is LRS?

- The **LRS** full form is **Liberalised Remittance Scheme**. It is a foreign exchange policy initiative introduced by the **Reserve Bank of India** in 2004.
- It intended to simplify and streamline the process of remitting funds outside India.
- This scheme helped Indians overcome international fund transfer restrictions as set by the **FEMA** (**Foreign Exchange Management Act**), 1999.
- Under **LRS**, resident individuals can freely remit funds up to a certain limit for various permissible transactions involving a current or capital account.

LRS scheme for NRIs

- The **LRS** scheme applies to the residents of India, and thus, the remittance takes place through a **savings account**. **Non-Resident Indians** are not supposed to have any savings accounts in Indian banks. Thus, they cannot remit funds from India, but they are permitted to transfer funds from **NRO**, **NRE**, and **FCNR**(NRO: Non-Resident Ordinary, NRE: Non-Resident External, FCNR: Foreign Currency Non-Resident) accounts abroad as per the regulations and requisite documentation:
  - They are permitted to transfer up to **USD 10,000** from an **NRO account**.
  - No limitations apply to payments made from an **NRE** or **FCNR account**.
- The **Liberalised Remittance Scheme** has made it simpler for Indian citizens to manage financial transactions abroad. One can use the funds for debt repayment, education, and other needs. One can also invest outside of India, which is a great method of diversifying one's investment portfolio.

Liberalised Remittance Scheme availability

The **Liberalised Remittance Scheme** is available to the following individuals and circumstances:

- The **Foreign Exchange Management Act** states that **LRS** is available to all resident individuals, including minors and students.

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- The eligible citizens must have an **Indian bank account**, a valid **Permanent Account Number (PAN)**, and a **passport**.
- They can use the remitted amount for educational, business, personal, or other purposes.

Liberalised Remittance Scheme limit

- Under the **LRS**, a resident individual can remit up to **USD 250,000** per financial year for permissible transactions.
- The **LRS limit** for education, medical treatment, employment, emigration, travel, investment, etc., is the same as mentioned. However, **one cannot use the remittances for margin trading, buying lottery tickets, real estate, etc.**

Tax on Liberalised Remittance Scheme

- Profits gained from overseas investments made through **LRS** are taxable in India depending on the investment's holding period. Investments over two years are considered **long-term capital gains** and impose a tax of **20%** on the total profit earned.
- Profits earned from investments below two years are taxed at normal **income tax slab rates**.
- Under the **LRS scheme**, one is liable to pay a **5% TCS** (**Tax Collected at Source**) for remittances exceeding the limit of **Rs. 7,00,000**. However, one can claim a refund for the deducted **TCS** while filing **ITR** (**income tax return**) using **Form 26AS**.

RBI guidelines for outward remittance

- **Outward remittance** indicates the transfer of funds from an Indian account to a foreign account.
- As per the **RBI guidelines**, outward remittance can be paid through a **demand draft** issued in the individual or the beneficiary's name.
- One can also open a **bank account outside India** to maintain foreign accounts.

Benefits of Liberalised Remittance Scheme in India

Some of the notable benefits of **LRS** are as follows:

- **Diversification of investment**: The **LRS** allows individuals to diversify their investment portfolio by investing in foreign assets such as **stocks**, **bonds**, **mutual funds**, and **real estate**.
- **Overseas education**: The **LRS** enables individuals to remit money for education-related expenses such as **tuition fees**, **living expenses**, and **books**. This allows students to pursue higher education in foreign universities and colleges.
- **Medical treatment**: The **LRS** allows individuals to remit money for **medical treatment** outside India. This is particularly helpful for those requiring specialised medical treatment unavailable in India.
- **Travel**: The **LRS** enables individuals to remit money for **travel-related expenses** such as tickets, hotel bookings, and other expenses.
- **Start-ups and business investments**: The **LRS** allows individuals to invest in foreign businesses, start-ups, and joint ventures. This helps entrepreneurs and business owners expand their businesses globally.
- **Gift and donations**: The **LRS** enables individuals to gift or donate money to their family members or charitable organisations outside India.

Employment Priorities in Union Budget 2024-25

Context

- **Union Budget 2024-25** highlights **employment** as a major priority, with 23 mentions in the Finance Minister's speech.
- This focus is a response to voter dissatisfaction with rising **unemployment**.
- **Prime Minister Narendra Modi** has introduced a comprehensive package of **employment schemes**.

Current State of Employment in India

Workforce Distribution

- **Economic Survey** estimates India's workforce at **56.5 crore** in 2022-23.

- **Sector-wise distribution:**
  - **Agriculture:** Over **45%**
  - **Manufacturing:11.4%**
  - **Services:28.9%**
  - **Construction:13%**
- **Official unemployment rate** was **3.2%** during this period.
- **Economists** argue that this statistic does not reflect the true employment situation due to:
  - Large number of **underemployed** individuals.
  - Many job seekers working in **informal sectors** like **farming**, **unorganised retail**, or as **casual labour**.
- Employment is classified if a person engaged in any **economic activity** for at least **30 days** in the past year.

Issues in the Workforce

- **18.3%** of the workforce, mostly women, work as **unpaid labor** in household enterprises.
- **Urban unemployment** for the quarter ending March 2024 was **6.7%**.
- **Youth unemployment** stood at **10%** in 2022-23.
- **Regular salaried positions** dropped from **22.8%** in 2017-18 to **20.9%** in 2022-23.
- Many salaried workers lack **formal contracts** or **social security benefits**.
- The **Employees Provident Fund Organisation (EPFO)** has **7.3 crore** contributing subscribers, but **30 crore** total accounts, including inoperative and multiple accounts.

Key Schemes in the Employment Package

Employment-Linked Incentives

1. **Wage Subsidy for First-Time Employees:**
   - Provides a wage subsidy up to **₹15,000** to first-time employees.
   - Estimated to cover **one crore** people.
2. **Manufacturing Sector Incentives:**
   - Wage subsidies for hiring first-time employees in **manufacturing**.
   - Incentives cover both employees and employers for up to **four years**.
   - Maximum incentive is **24%** of a ₹25,000 monthly wage.
3. **EPFO Contribution Reimbursement:**
   - Reimburses up to **₹3,000** of monthly **EPFO contributions** for new hires.
4. **Industrial Training Institutes (ITI) Upgrade:**
   - Aims to enhance ITIs and **skilling** efforts.
   - Expected to benefit **20 lakh** students.
5. **On-the-Job Skilling:**
   - Targets **one crore** youth for internships in top companies.
   - Provides a **monthly allowance** of ₹5,000 for one year.
   - Companies cover training costs and **10%** of the allowance.

Challenges and Criticisms

Implementation Concerns

- Critics, including economists and small industrialists, point out potential obstacles in the **implementation** of these schemes.
- For example, the first-time employee incentive requires completion of an **online financial literacy course** for the second instalment of the subsidy, which some view as impractical.
- Additionally, a clause requiring employers to refund the subsidy if an employee leaves within **12 months** may deter small employers from participating.
- The scheme for manufacturing jobs also has a minimum hiring requirement that may be challenging for firms to meet.

Effectiveness of Schemes

- Economists argue that the main constraint to hiring is not **wage costs** but rather insufficient demand, low consumption, and lack of **private investment**.
- While **skilling** is important, it **may not address the core issues hindering job creation.**
- Some experts suggest that the focus should be on increasing demand and supporting **MSMEs** rather than just providing fiscal incentives.
- A broader approach could involve raising wages in existing schemes like **MGNREGA** or creating new **employment guarantee schemes** for urban workers.

Future Directions

- For effective job creation, experts recommend focusing on **labor-intensive sectors**, **small towns**, and **MSMEs**.
- A **bottom-up approach**, emphasizing wage increases and investment in MSMEs, could have a significant impact.
- **Increasing consumption and addressing demand constraints may be more effective** than solely relying on fiscal incentives.

NITI Aayog's Blueprint for Enhancing India's Electronics Sector

Context

- India's electronics sector faces challenges in competing globally due to high production costs.
- To address this, the government's think tank, NITI Aayog, has released a report **emphasizing the need for structural changes in tax policies and improvements in manufacturing infrastructure.**

Need for Tax Rationalization

- The report, titled ***Electronics: Powering India's Participation in Global Value Chains***, highlights the necessity of **rationalizing both direct and indirect tax structures to reduce production costs**.
- This adjustment is crucial for India to enhance its competitiveness on the international stage.

Proposed Fiscal Incentives

NITI Aayog's report categorizes fiscal incentives into three main types:

- **Opex Support**: Aimed at scaling the manufacturing of less complex components.
- **Capex Support**: Intended to assist in establishing manufacturing facilities for complex components.
- **Hybrid Support**: Combines both capex and opex support.

Audit and Development of Electronics Manufacturing Clusters (EMCs)

The report advocates for a comprehensive audit of existing EMCs to assess their utilization and address any implementation issues. It recommends the creation of large-scale clusters, including:

- **4 Greenfield Clusters**: New, large-scale manufacturing facilities.
- **6 Brownfield Clusters**: Expansion or upgrade of existing facilities.

Localized Regulations and Cluster Governance

- To enhance the effectiveness of electronics clusters, the report **suggests developing localized regulations, cluster governance structures, and provisions for essential common facilities.**
- This includes **policies to make clusters more attractive through duty-free imports.**

High Tariffs and Global Competitiveness

- The report notes that India's high tariffs on electronics components—**averaging around 7.5%—are a barrier to scaling up exports**.
- This rate is **significantly higher than those in China (4%), Malaysia (3.5%), and Mexico (2.7%).**

Current Status and Challenges

- India has made progress in final assembly and sub-assembly, **particularly in mobile and consumer electronics.**
- However, the country remains heavily dependent on imports for component manufacturing and design capabilities.
- The smartphone assembly sector has seen notable growth, with approximately 2 billion units assembled between 2014 and 2022.

Conclusion

- To strengthen India's position in the global electronics market, the report emphasizes the need for a rationalized tax structure, improved manufacturing infrastructure, and strategic policies to boost competitiveness and reduce dependency on imports.

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TIME FOR INDIA TO RESET ITS TRADE POLICY: AN ANALYSIS

Introduction

- India's **forward-thinking approach** to shaping **trade and investment rules** is evident from its **active role** in **G20 forums** and **bilateral trade negotiations** with economically advanced countries. To strengthen its trade policy, India should extend this **proactive strategy** to **World Trade Organization (WTO) negotiations**.

Importance of World Trade Organization Participation

- **Active involvement** in **WTO discussions** is essential for India to effectively engage with major markets. This participation will help India establish a **leadership role** in the **Global South**. While other nations are reaching agreements on **new regulations** for **disruptive technologies** and **carbon border adjustments**, India's participation is crucial to ensure its **interests** are safeguarded.

Resistance to Expanding World Trade Organization Agenda

- India has opposed the **WTO's expansion** into areas like **e-commerce, trade, climate change**, and **investment facilitation**. This resistance aims to maintain **policy flexibility** for **economic development**, especially in **traditional sectors** such as **agriculture** and **fisheries**. However, this position might limit India's opportunities in **emerging fields** like the **digital economy** and **high-tech manufacturing**, which are vital for India's **Vikas Bharat** (Development India) vision.

Global Economic Governance

- **Global economic governance** is being reshaped by **geoeconomics**, **new technologies**, **resilient global supply chains**, and **environmental sustainability**. As a **growing economy**, India has significant stakes in this **new landscape**. Finding a **new balance** in global rules will be challenging, but India's rising **global role** requires it to manage differences amid these **changing dynamics**.

Domestic Policy Reforms

- India's **domestic policy reforms** are designed to boost **global integration** by supporting **technology-driven** and **sustainable economic growth**. The country has become a popular destination for **global investors**, ranking **third** in attracting **foreign direct investment** in 2022. India aims to increase **goods exports** to **one trillion dollars by 2030**, and is positioning itself as a **manufacturing hub**. The **e-commerce market** is expected to grow to **three hundred fifty billion dollars by 2030**, though current **e-commerce exports** make up only **one percent** of total exports.

Regulatory Reforms and Digitisation

- To take advantage of **e-commerce opportunities**, India has introduced significant **regulatory reforms**, enhancing **digitisation**, **transparency**, and **efficiency** in business operations. Changes in **data protection**, **consumer rights**, **competition**, and **taxation** have created a favorable environment for **e-commerce businesses**. Aligning **data protection regulations** with **global standards** is also part of this effort. India is committed to achieving **net zero carbon emissions by 2070** and improving **energy access** while cutting **greenhouse gas emissions**.

Export-Led Economic Growth

- In India's evolving **export-driven growth model**, there should be a shift from focusing on **unrestricted domestic policies** to ensuring **policy predictability** in key markets like the **United States, European Union, Japan**, and other **emerging economies**. To fully capitalize on opportunities, India must engage actively in **WTO negotiations** on **e-commerce, trade, climate change**, and **investment facilitation**.

Historical Context and Present Needs

- The reforms after the **1991 economic crisis** dismantled **trade barriers**, attracted **foreign investments**, and spurred **economic growth**. Today, India needs to focus on **digitisation, sustainable development**, and **resilient supply chains** to strengthen its **manufacturing sector**. Seeking **international consensus** on **emerging economic issues** and navigating the shifting **geo-economic landscape** is crucial for India.

Conclusion

- India's **active involvement** in **WTO discussions** is vital for **successful bilateral relations** and achieving **leadership** in the **Global South**. To reach ambitious **export goals** and boost **economic growth**, India aims to raise its **trade-to-gross domestic product ratio** to **thirty to thirty-five percent**. Extending India's **proactive strategy** from **G20 forums** and **bilateral negotiations** to **WTO negotiations** is key to achieving **national economic development objectives**.

3.2 SNIPPETS

Topics	Details
'One Scientist-One Product' Programme	• The **Indian Council of Agricultural Research (ICAR)** is set to unveil a groundbreaking initiative, the **'One Scientist-One Product' programme**. • The **'One Scientist-One Product' Programme** aims to enhance specialization and improve research efficiency by focusing individual scientists on specific products or research areas. • Each of ICAR's **5,521 scientists** will be assigned the task of developing a **product, technology, model, concept,** or **notable publication** under a new program that will run for five years, beginning with a focus on **high-yielding oilseeds** and **pulses**. • Scientists will identify their projects at the start of each year, with progress monitored **quarterly** at the institute level and **biannually** at headquarters. **Indian Council of Agricultural Research (ICAR),** • The **Indian Council of Agricultural Research (ICAR)**, established in 1929 under the Societies Registration Act, 1860, is an autonomous organization operating under the **Department of Agricultural Research and Education (DARE)**, Ministry of Agriculture and Farmers Welfare. As the apex body for coordinating, guiding, and managing research and education in **agriculture**, including **horticulture**, **fisheries**, and **animal sciences**, ICAR has

been instrumental in driving the **Green Revolution** and subsequent agricultural advancements in India. Headquartered in **New Delhi**, ICAR's functions include **agricultural research and development**, where it conducts research, develops technologies, and promotes innovations; **education and training**, overseeing agricultural education and providing capacity-building programs; **policy support and advisory roles**, advising the government on agriculture and rural development policies; **extension services**, transferring technology to the fields through various agencies; and **resource management**, focusing on the sustainable use of natural resources and promoting environmental sustainability.

3.3 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

AGROVOLTAICS	RBI'S RULES FOR FRAUD RISK MANAGEMENT
PROJECT NEXUS	LATE BLIGHT DISEASE
IEEE 2061-2024 STANDARD	KARNATAKA'S LOCAL JOBS RESERVATION BILL
NATIONAL TEST HOUSE	REPORT ON NON-PERFORMING ASSETS (NPA) UNDER EMERGENCY CREDIT LINE GUARANTEE SCHEME (ECLGS)
STEEL SLAG	NaBFID
SKIMMED MILK POWDER (SMP)	INTERGENERATIONAL EQUITY AS TAX DEVOLUTION CRITERION
PINK BOLLWARM	SEBI'S NEW ASSET CLASS
PRODUCER PRICE INDEX	PARALLEL GREEN REVOLUTION IN MAIZE
BALANCE OF PAYMENTS	SCHEME TO INCENTIVISE STATES FOR AGRI REFORMS
GLOBAL WEALTH TAX ON BILLIONAIRES	MSME-TEAM INITIATIVE
BHARAT BILL PAYMENT SYSTEM (BBPS)	REVISED MODEL SKILL LOAN SCHEME
VIZHINJAM PORT	REMOVAL OF INDEXATION BENEFIT
RIGHT TO REPAIR	INDIA'S ILLEGAL COAL MINING PROBLEM
DIGITAL COMPETITION BILL: EX-ANTE FRAMEWORK	NATURAL FARMING
PRODUCTION LINKED INCENTIVE (PLI) SCHEME FOR WHITE GOODS	AN OUTLINING OF URBAN TRANSFORMATION STRATEGIES
RECORD INFLOWS INTO INDIA'S EQUITY MUTUAL FUNDS	CEREAL GRAINS IN ETHANOL PRODUCTION
FINANCIAL INCLUSION INDEX (FI-INDEX)	RBI REPORT ON DIGITALISATION AND FINANCIAL SERVICES
NEW LABOUR CODES	LIQUIDITY COVERAGE RATIO
DEREGULATING NON-SUBSIDISED FERTILISERS	FUTURES AND OPTIONS TRADING
AGRI-SURE FUND BY NABARD	RBI DRAFT CIRCULAR ON ALTERNATIVE FACTOR AUTHENTICATION
SDG INDIA INDEX 2023-24	BOOST TO THE DOMESTIC MRO INDUSTRY
COMMEMORATIVE COIN	COMMON SERVICES CENTRES SPECIAL PURPOSE VEHICLE (CSC SPV)
INDIA'S TRADE FIGURES	THE STATE OF INDIA'S INFORMAL ECONOMY, WHAT THE NUMBERS SAY ON JOBS

4. DEFENSE & SECURITY

4.1 DEFENCE PRODUCTION IN INDIA

Context

- The country recorded its **highest-ever growth in indigenous defence production** in value terms during Financial Year (FY) 2023-24.

Details

- India achieved its highest-ever indigenous defence production in FY 2023-24, reaching ₹1.27 lakh crore, a 16.7% increase from the previous year. ***The growth in defence production was contributed by both DPSUs/PSUs (79.2%) and the private sector (20.8%).***

Facts:

- *Defence exports reached **Rs 21,083 crore (USD 2.63 billion) in FY 2023-24, a 32.5% increase** from the previous year.*
- *Comparing two decades, defence exports saw a **21-fold increase from 2014-15 to 2023-24 compared to 2004-05 to 2013-14.***
- *The private sector contributed approximately **60% to the defence exports.***
- *Defence Public Sector Undertakings (DPSUs) **contributed around 40% to the defence exports**.*

Introduction

*India's defence production sector has witnessed **significant growth and transformation** in recent years. As the **world's largest arms importer**, India has been making concerted efforts to boost **indigenous defence manufacturing**, aiming to reduce **dependency on foreign suppliers** and strengthen its strategic autonomy.*

Current Scenario:

- **Make in India Initiative:** The government's push for self-reliance through **the 'Make in India' program** has given impetus to domestic defence production.
- **Defence Procurement Policy:** Revisions in the policy have prioritized **indigenous procurement** and encouraged private sector participation.
- **Foreign Direct Investment (FDI):** Increased FDI limit in the **defence sector to 74**.

Challenges:

- **Technological Gap**: India still lags behind in certain **critical technologies**, necessitating continued reliance on imports for advanced systems.
- **Research and Development:** Insufficient investment in **R&D hinders innovation** and development of cutting-edge defence technologies.
- **Skill Development**: Shortage of skilled workforce in specialized areas of **defence manufacturing.**
- **Long Gestation Periods:** Defence projects often face delays due to complex procurement procedures and lengthy trial processes.

Opportunities:

- **Export Potential:** India's growing defence industry presents **opportunities** to become a net exporter of defence equipment.
- **Public-Private Partnerships:** Collaboration between **defence PSUs and private sector** can lead to technology transfer and **capacity building**.
- **Start-up Ecosystem:** Encouraging defence start-ups can bring innovation and agility to the sector.
- **Offset Policies:** Leveraging offset obligations of **foreign OEMs to boost domestic manufacturing capabilities.**

Way Forward:

- **Increase R&D Spending:** Allocate more resources for defence research to **bridge the technology** gap.

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- **Skill Development:** Invest in specialized training programs to create a skilled workforce for the defence sector.
- **Promote Exports:** Develop a comprehensive strategy to promote Indian defence products in the **global market.**
- **Encourage Innovation:** Create an ecosystem that fosters innovation in defence technology, including support for **start-ups and SMEs.**

Conclusion

- India's journey towards self-reliance in defence production is crucial for its strategic autonomy and economic growth. While challenges persist, the opportunities are immense. With continued focus on **policy reforms, technological advancements, and collaborative efforts** between public and private sectors, India can emerge as a global hub for defence manufacturing.

4.2 INDIGENISATION LIST

Context

- The Ministry of Defence has notified the fifth Positive Indigenisation List (PIL) consisting 346 defence items in a major increase to Aatmanirbharta in defence production.
- The most recent announcement in this series is the **5th Positive Indigenisation.**

Some Examples of Positive Indigenisation Lists (PIL)

- **Line Replacement Units (LRUs):** These are self-contained assemblies that can be easily replaced in a larger system.
  - Radars and avionics for aircraft
  - Fire control systems for tanks
  - Sonar systems for submarines
- **Sub-systems:** These are smaller components that make up a larger LRU.
  - Missile guidance systems
  - Electronic warfare equipment
  - Communication systems
- **Spares and Components**: These are individual parts that may need regular replacement or maintenance.
  - Engine components for aircraft and vehicles
  - Weapon system parts
  - Sensors and communication modules

About Positive Indigenisation List (PIL)

- The Positive Indigenisation Lists (PIL) is a key initiative by the Indian Ministry of Defence (MoD) to promote self-reliance (Atmanirbhar Bharat) in the defence sector. This policy aims to reduce dependence on foreign arms imports and strengthen the domestic defence industry. As part of these efforts, four PLI lists have been released, with the first list of 351 items published in December 2021. This list includes highly complex systems, sensors, weapons, and ammunition, which will be procured from indigenous sources according to the staggered timeline outlined in the Defence Acquisition Procedure 2020.

Objectives

- Enhancing National Security: By ensuring that key defense equipment is produced within the country, India can safeguard itself from supply chain disruptions and geopolitical uncertainties.
- Promoting Local Industry: Encouraging domestic production stimulates the local economy, creates jobs, and raises technological innovation.

Key Features of the Indigenisation Lists

- **Categorization of Defence Items:** The lists categorize items that will no longer be imported. This includes a range of equipment from simpler components to advanced systems like **naval utility helicopters and light combat aircraft.**
  - The aim is to **progressively increase** the complexity and value of items included in subsequent lists.
- **Phased Implementation:** Each list comes with a timeline, providing manufacturers with a clear roadmap and sufficient time to **develop or scale up their production capacities**.
  - Deadlines ensure that both **public and private sector manufacturers** align their strategies and investments accordingly.
- **Collaborative Development:** The initiative encourages collaboration between various stakeholders, including **government research and development agencies, private companies**, and international partners where necessary.
- **Innovation and R&D:** The lists emphasize the importance of research and development, **pushing domestic manufacturers to innovate** and ensure that the equipment meets the highest standards of quality and functionality.

Impact on Domestic Defence Industry

- **Boost to Local Manufacturers:** Companies in the defence sector are experiencing a surge in orders and investment, leading to **increased production capacity** and **technological upgrades**.
- **Skill Development and Employment:** The initiative is **creating numerous job opportunities** across various skill levels, from skilled engineers to technical operators.
  - It also necessitates **training and upskilling programs**, ensuring that the workforce is capable of meeting sophisticated production requirements.
- **Technological Advancements:** Domestic firms are being pushed to **innovate and adopt** advanced technologies, which is progress a **culture of research and development**.
  - This is significant for maintaining the

competitiveness of **Indian defence manufacturers** on a global scale.

Challenges and the Way Forward

- **Meeting Quality Standards:** Ensuring that domestically produced equipment meets international quality standards is a significant challenge. **Continuous quality assurance and stringent oversight** mechanisms are essential.
- **Sustained Investment in research and development:** **Long-term investment** in research and development is vital for the sustained success of this initiative. Government support and incentivization play an essential role in this aspect.
- **Technological Capabilities:** Bridging the gap between **domestic capabilities and the technological complexity** of certain items requires sustained investment in research & development and collaboration between **academia and industry**.
- **Timelines and Efficiency:** Meeting the timelines for indigenization requires **efficient execution** by both **public and private stakeholders**. Delays can impact operational readiness.
- **Transparency and Competition:** Ensuring a **transparent and competitive environment** within the domestic industry is central to stand-in efficiency and quality in production.

Conclusion

- The **Fifth Positive Indigenisation List** is a testament to India's commitment to becoming self-reliant in defence manufacturing. It is a strategic move that **not only enhances national security** but also propels **economic growth and technological advancement**.
- By nurturing a **strong domestic defence industry**, India is poised to achieve **greater self-sufficiency** and strategic autonomy, ensuring that its armed forces have access to the best equipment necessary to safeguard **national interests.**

4.3 SANCTION TO PROSECUTE ARMED FORCES PERSONNEL

Context

- The recent incident in Nagaland, where security forces opened fire on civilians, has reignited the debate on the process for prosecuting armed forces personnel in India.

Details

AFSPA and Sanction for Prosecution

- **The AFSPA grants special powers to the armed forces in "disturbed areas,"** enabling them to operate with a certain degree of immunity from prosecution.
- **Under Section 6 of AFSPA**, no legal proceeding can be initiated against personnel acting under this Act without prior sanction from the **Central Government**.
- This provision is meant to **protect armed forces personnel** from frivolous litigation and ensure that they can perform their duties without fear of legal repercussions. However, this has often been criticized for leading to impunity and human rights violations.

Historical Context of Sanction Provisions

- Historically, the **Centre has granted prosecution sanction** in select cases where it was evident that armed **forces personnel** engaged in unwarranted atrocities or exceeded their mandate.
- The principle here is to **maintain accountability** while recognizing the challenging circumstances under which these forces operate.

Case of Nagaland's Mon District

- *In the Mon incident, the **Nagaland government** argues that there is strong evidence of misconduct by the Army personnel.*
- ***The refusal to grant prosecution sanction** has therefore **raised questions** about the transparency and accountability of the armed forces under AFSPA.*
- *The **Supreme Court's involvement** indicates a significant **legal and moral inquiry** into the limits of operational immunity provided by AFSPA.*

Legal Framework Governing Prosecution

Legal Provision	Description	Key Features
Armed Forces (Special Powers) Act (AFSPA)	**Grants special powers** to the armed forces in **"disturbed areas"** declared by the government.	**Section 6:** Immunity from prosecution, suit, or legal proceedings except with previous sanction from the Central Government.
Code of Criminal Procedure (CrPC)	Governs the procedure for prosecution of **public servants, including armed forces personnel.**	**Section 197:**Requires prior sanction from the Central or State Government to **prosecute any public servant** for actions purportedly taken in the discharge of their official duties.
Military Law (Army Act, Navy Act, Air Force Act)	Provides a framework for internal **disciplinary mechanisms** within the military.	**Offences committed by personnel** can be tried under **court-martial procedures**, operating parallel to civilian judicial processes.

The rationale behind prior sanction stems from several factors

- **Maintaining Operational Effectiveness: Granting immunity** from routine legal proceedings allows the armed forces to focus on operational duties without fear of frivolous lawsuits.
- **Command Responsibility:** Disciplinary action within the **military structure** ensures swift and appropriate punishment when necessary.
- **National Security Considerations: Disclosing sensitive operational** details during civilian trials might jeopardize national security.

However, concerns regarding the current system include

- **Lack of Transparency:** The process for granting sanction is **opaque**, leading to accusations of bias and a **sense of impunity.**
- **Delayed Justice:** Obtaining central government sanction can **be time-consuming**, delaying justice for victims of **alleged misconduct**.
- **Erosion of Public Trust:** Lack of **accountability** can strain the relationship between the armed forces and the civilian population.

Possible Reforms

- **A Dedicated Investigative Body:** An **independent body** could investigate allegations against armed forces personnel and recommend prosecution.
- **Time-Bound Sanction Process:** Setting a **timeframe for the government** to decide on sanction requests could expedite the process.
- **Differentiating Offenses: Categorizing offenses** based on severity might allow quicker prosecution in **less serious cases**.

Conclusion

- **One potential way forward could be to establish an independent review mechanism** that evaluates cases where prosecution sanction is sought, ensuring transparency and accountability while **respecting the operational complexities** faced by armed forces personnel.

4.4 CENTRAL RESERVE POLICE FORCE (CRPF)

Context

- The Prime Minister has extended greetings to all CRPF personnel on their Raising Day and said their unwavering dedication and relentless service to the nation are commendable.

Details

About Central Reserve Police Force (CRPF)

- It is a **Central Armed Police Force** in India under the **Ministry of Home Affairs.** The CRPF's primary role lies in assisting the States and Union Territories in police operations to maintain law and order and provide Internal security. It is composed of **Central Reserve Police Force (Regular) and Central Reserve Police Force (Auxiliary).**

Duties performed by the CRPF include

- Crowd/ Riot control
- Counter Militancy/Insurgency operations
- Dealing with Left Wing Extremism
- Protection of VIPs and vital installations
- Checking environmental degradation and protection of local Flora and Fauna
- Fighting aggression during War time
- Participating in UN Peacekeeping Mission
- Rescue and Relief operations at the time of Natural Calamities

Evolution and Role of the Central Reserve Police Force (CRPF)

Formation and Early Role:

- The CRPF was originally constituted as the **Crown Representative Police in 1939** to manage political unrest and agitations in the Princely States following the **Madras Resolution of 1936**.
- After Independence, it was renamed as the Central Reserve Police Force by an Act of Parliament on **28 December 1949, and became an armed force of the Union.**

Post-Independence Contributions:

- Under the guidance of **Sardar Vallabhbhai Patel**, the CRPF played a central role in the integration of princely states into the Indian Union.
- It disciplined rebellious states such as **Junagadh and Kathiawar** and maintained law and order in various regions during the **early 1950s**.

Conflict Engagements:

- The CRPF faced a noteworthy challenge on **21 October 1959** when its personnel were attacked by the **Chinese Army at Hot Springs in Ladakh,** resulting in casualties and imprisonment.
- It participated in the **Sino-Indian War of 1962, Indo-Pak wars of 1965 and 1971**, and was deployed to check infiltration and border crimes on the **Kutch, Rajasthan, and Sindh borders.**

International Peacekeeping:

- The CRPF made history by **airlifting thirteen companies** to join the Indian Peace Keeping Force in **Sri Lanka** to combat militant cadres.
- It also **participated in UN Peace Keeping missions** in countries like **Haiti, Namibia, Somalia, and Maldives.**

Operations in Northeast India:

- In the late 1970s, the CRPF was deployed to manage **extremism in Tripura and Manipur**,

and address turmoil in the Brahmaputra Valley.

- The force continues to have a **significant presence in the Northeast**, dealing with ongoing insurgency and maintaining communication lines.

Organizational Structure

- The CRPF operates under the aegis of the **Ministry of Home Affairs (MHA).**
- It is **headed by a Director-General (DG),** supported by several **Additional Director Generals (ADGs),Inspectors General (IGs),** and other senior officers.
- The **force is divided into 246 battalions**.

Key Units

- **Rapid Action Force (RAF):** Specialized in **riot control and crowd management**.
- **Commando Battalion for Resolute Action (COBRA):** Expert in **anti-insurgency and guerrilla warfare tactics.**
- **Special Duty Group (SDG):** Functions akin to a special operations unit for **high-value targets and critical missions.**

Core Functions

The primary mandate of the CRPF includes:

- **Maintaining Public Order:** Ensuring **peace and stability** during civil unrest.
- **Counter-Insurgency**: Neutralizing threats in areas affected by **insurgency**, notably in the Northeast and Maoist-affected regions.
- **Counter-Terrorism:** Proactive measures and interventions in **terrorism-hit areas**, providing security to vital **installations** and **infrastructure**.
- **Election Security:** Ensuring smooth **conduct of elections**, particularly in sensitive regions.
- **VIP Security:** Protecting prominent **political leaders and visiting dignitaries**.
- **Disaster Management:** Engaging in rescue and relief operations during natural calamities.

Recent Developments

In recent years, the CRPF has adapted to evolving threats and challenges. According to a Press Information Bureau (PIB) release dated July 27, 2024, the CRPF has achieved several milestones and innovations:

- **Operational Efficiency:** Enhanced operational capacity through **advanced training and acquisition** of modern **weaponry and technology**.
- **Welfare Measures**: Improved welfare facilities for personnel, focusing on **mentalhealth and family welfare programs.**
- **Infrastructure Development:** Upgrading facilities, living conditions, and creating a supportive work environment.
- **Digital Transformation:** Implementation of **digital toolsfor better coordination** and communication within the force.

Challenges

Despite its achievements, the CRPF faces several challenges:

- **Resource Allocation**: Ensuring adequate resources and **timely provisioning of equipment**.
- **Training:** Continuous **upgradation of training methods** to counter new-age threats.
- **Morale and Welfare:** Maintaining **high morale** through well-structured welfare programs.
- Looking ahead, the CRPF aims to further enhance its capabilities through **modern training, better technology,** and a focus on personnel welfare. **Continuous evolution and adaptation** are critical for the force to remain a formidable entity in ensuring India's internal security.

Conclusion

- The CRPF's enduring legacy is a testament to its unwavering commitment to India's security and sovereignty. Its role in maintaining public order, counter-insurgency operations, and disaster management emphasizes its versatility and indispensability.

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4.6 SHORT ARTICLES

INS Teg

Context:

- The Indian warship, INS Teg, has rescued nine sailors, including eight Indians and one Sri Lankan, who were on board the Comoros-flagged oil tanker — MT Falcon Prestige — that had capsized on July 14 off the Oman coast.

Details:

About INS Teg:

- ***INS Teg (F45) is the fourth Talwar-class frigate*** *of the Indian Navy, constructed by the* ***Yantar shipyard in Kaliningrad, Russia****, and* ***commissioned on 27 April 2012****. It is the first of the* ***second batch of Talwar-class frigates.***
- *The* ***main distinction*** *between INS Teg and earlier Talwar-class ships is the use of* ***BrahMos missiles instead of Klub-N missiles.***

Design:

- Part of the Talwar class, modified **Krivak III-class guided missile frigates**.
- Built using **stealth technologies** and a special hull design to **reduce radar cross section**.
- Contains primarily Russian-made equipment, with significant Indian-origin systems.
- **Key differences from earlier Talwar-class ships:**
  - Uses BrahMos missiles instead of Klub-N missiles.
  - Uses AK-630 instead of Kashtan weapon systems.
- First of three frigates in a follow-up order to the **initial Talwar-class batch.**

4.7 SNIPPETS

Topics	Details
Scholar Warrior	• **A scholar warrior is a military professional** who seamlessly combines intellectual acumen with combat prowess. • **The goal is to create well-roundedofficers** who possess academic knowledge, understand statecraft, and maintain their core war-fighting skills. • Historically, many legendary military leaders, such as **Sun Tzu, Napoleon Bonaparte**, and **Maharaja Ranjit Singh,** exemplified the virtues of intellect combined with martial skill.
INS Ranvir	• INS Ranvir is a **Rajput Class Guided Missile Destroyer** which has undergone upgrade with state of art weapons and sensors, majority being indigenous reiterating the Indian Navy's steadfast focus on ***Aatmanirbharta***. • **INS Ranvir (D54) is a distinguished destroyer** in the Indian Navy, serving as a pivotal asset in maritime defense. The vessel, classified as a **Rajput-class destroyer**, reflects India's strategic maritime capabilities.
Snowblind Malware	• Snowblind is a malware that targets **Android devices** to steal banking information. • Discovered by **cybersecurity firm Promon**, this malware can take your **banking login details** and perform unauthorized transactions.
Hwasongpho-11 DA-4.5	• The **Hwasongpho-11, or Hwasong-11, is a series of short-range ballistic missiles (SRBM)** developed by the North that are otherwise known **as KN-23 and KN-24.** • The first of the two missiles launched by the North appeared to be a **KN-23 that flew about 600 km (373 miles).**

Exercise MAITREE	• Exercise MAITREE is a **bilateral military exercise** conducted annually between the **Indian Army and the Royal Thai Army**. • **Location-** Thailand's Tak Province • It serves as a crucial platform for **strengthening military cooperation** and **enhancing the capabilities** of both nations to address common security threats.
Exercise Nomadic Elephant	• It is a **bilateral military exercise** between **India and Mongolia**. • **Location-** Umroi (Meghalaya) • It aims to enhance **interoperability and mutual understanding** between the two nations' armed forces, focusing on counter-**insurgency and counter-terrorism** operations under the United Nations mandate.
Rudram 1	• Rudram-1 is **India's first indigenous anti-radiation missile** developed by the **Defence Research and Development Organisation (DRDO).** • The missile is designed to suppress enemy air defenses by targeting and destroying **radar installations, communication sites, and other radio frequency emitting sources.** • The missile is integrated with the **IAF's Sukhoi-30MKI fighter jets**, serving as a potent platform for its deployment.
Typhoon Missile System	• The Typhon system represents a crucial advancement in the **US Army's arsenal**. • It is designed specifically for launching **Raytheon's SM-6 missiles and Tomahawk cruise missiles**. • It is positioned as a **land-based system,** Typhon fills the operational gap between the **Precision Strike Missile (PrSM),** with its range of 500 kilometers, and the future **Long-Range Hypersonic Weapon (LRHW),** which is projected to reach up to **2,776 kilometers.**
Camcopter S-100	• Camcopter S-100 is an **Australian unmanned aerial vehicle** (UAV) using a **rotorcraft design**. • Produced by the **Austrian company Schiebel**, it was developed from 2003 to 2005. • **The S-100 UAV has a 200 kg MTOW**, 6-hour endurance, and **220 km/hr maximum speed**, capable of reaching 5,500 m. • It **carries up to 50 kg of surveillance** and tactical payloads, operates in adverse conditions without special equipment, and is controlled via GPS waypoints or pilot input. • It **transmits high-definition imagery** in real-time, using **fly-by-wire technology** and redundant flight computers for autonomous operation.
Sentinel Nuclear Missile	• The **LGM-35A Sentinel**, developed by **Northrop Grumman** for the **USAF**, will replace the **LGM-30 MinutemanIII ICBMs**. • Equipped with a **W87-1 thermonuclear warhead**, it will feature advanced launch, flight, and command systems, and maintain **security during warhead maintenance**. • The missile will have a **range exceeding 5,500 km,** capable of reaching **global targets within 30 minutes.**
Stinger	• The **FIM-92 Stinger**, designed and manufactured by the **American Defense Industry**, is a **man-portable surface-to-air missile system (MANPADS)** that entered service with the U.S. Army in **1981**.

	• **Currently used by the U.S. armed forces and 29 other countries**, it is produced by **Raytheon Missile Systems** and under license by EADS in Germany. • It provides **air defense capabilities to U.S. and allied troops**, eliminating the immediate need for air support against enemy aircraft.
Tushil and Tamal	• **INS Tushil** and **INS Tamal** are two **stealth frigates** being built for the **Indian Navy in Russia.** • These frigates are being **built under Project 1135.6,** which is a follow-on to the successful Talwar-class frigates. • The ships are being **constructed at the Yantar Shipyard in Kaliningrad, Russia.**
Radomes	• **A radome is a protective enclosuredesigned to shield radar or antenna systems** from environmental elements while allowing electromagnetic signals to pass through. • **Made from rigid materials or air-inflated fabrics**, radomes come in various shapes for specific applications. • They **maintain antenna performance by mitigating environmental impacts** and conceal electronic equipment for security purposes. They prevent rotating antennas from colliding with nearby objects, ensuring durability and efficiency.
INS Brahmaputra	• It was **commissioned in April 2000**, is the lead ship of the **indigenously built 'Brahmaputra' class-guided** missile frigates, **replacing the Talwar class** and upgrading **the Godaviri class**. • The other ships in this class, **INS Betwa and INS Beas**, also carry river names. • **Built by GRSE,** this class represents a significant step in India's naval capabilities
Phase II BMD	• Ballistic Missile Defence (BMD) systems are **advanced military capabilities** designed to detect, **intercept, and destroy incoming ballistic missiles** before they reach their targets. • **The primary objective of Phase II** is to enhance the interception range and altitude, thus providing a more robust defense against intermediate and intercontinental ballistic missiles.`
Khaan Quest	• **Khaan Quest is an annual multinational military exercise** hosted by **Mongolia**. • It aims to enhance international cooperation in peacekeeping operations. • The exercise features participation from numerous countries, promotion of **collaboration and interoperability** among their armed forces.
INS Triput	• The **first indigenously** built **Talwar-class frigate, 'Triput,'** is part of a deal between India and Russia signed in October 2016 to acquire four Admiral Grigorovich class stealth frigates. • **Two ships, 'Tushil' and 'Tamal,'** will be imported, while the remaining two, including **'Triput,'** will be constructed in India **by Goa Shipyard Limited (GSL) through a transfer of technology (ToT).** • The Indian Navy already operates **six Talwar-class** ships: **INS Talwar, INS Trishul, INS Tabar, INS Teg, INS Tarkash, and INS Trikand.**
Wind Demon	• The missile, developed by **Israel Aerospace Industries (IAI),** is an advanced, **cost-effective air-to-surface** cruise missile designed for precise, **long-range attacks**. • It can be launched from helicopters or aircraft to strike both mobile and **stationary targets autonomously.**

Mako Missile	• The air-launched **hypersonicmulti-mission missile**, developed by Lockheed Martin, will be the **world's first hypersonic weapon deployable** from the internal weapons bay of **fifth-generation stealth fighter jets like the F-35and F-22 Raptor.** • It is designed for various missions, targeting **threats at sea, in theair, and on land.`**
INS Tabar	• It is a **stealth frigate** built for the Indian Navy in Russia and is the third vessel of the **Talwar-class frigates.** • **Commissioned on April 19, 2004, in Kaliningrad, Russia**, INS Tabar is capable of conducting air, surface, and subsurface missions. • The ship is part of the **Indian Navy's Western Fleet**, based in Mumbai under the Western Naval Command.

4.8 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topics	Date
SEBEX 2	3RD JULY
5th Generation Aircrafts	4TH JULY
Indian Army Dress Regulations	5TH JULY
Exercise Pitch Black	14TH JULY
Technology Development Fund Scheme	14TH JULY
Patriot	15TH JULY
Cert-In	15TH JULY
Militancy In Jammu	15TH JULY
SIM Swapping	15TH JULY
Action Against Drug Syndicates	20TH JULY
Caller ID Spoofing	29TH JULY
Assam Rifles	29TH JULY
Gains	
Rising Regulatory Scrutiny Over Big Tech	
25th Kargil Vijay Diwas	

5. ENVIRONMENT & ECOLOGY

5.1 STATE OF THE WORLD'S FORESTS 2024

Context

- The 2024 report "The State of the World's Forests" by the Food and Agriculture Organization (FAO) of the United Nations provides a detailed analysis of global forest conditions, highlighting both progress and ongoing challenges in forest conservation.

Food and Agriculture Organization (FAO)

- The **FAO, established in 1945, is a UN agency** committed to fighting hunger, improving nutrition, and ensuring food security worldwide.
- **With 195 members and headquarters in Rome**, the FAO operates globally, focusing on agriculture, forestry, fisheries, and land and water resource development through research, technical assistance, education, and data collection.

Positive Developments in Forest Conservation

Slowing Deforestation Rates:

- Between 1990 and 2020, 420 million hectares of forest were converted to other uses. However, **the annual deforestation rate dropped from 15.8 million hectares (1990-2002) to 10.2 million hectares (2015-2020).**
- The net rate of change in forest area, considering both deforestation and forest expansion, has improved significantly, with a net loss of -4.7 million hectares per year from 2010 to 2020.

Country-Specific Gains:

- Ten countries, including China, Australia, India, Chile, Vietnam, Turkey, the USA, France, Italy, and Romania, recorded annual gains in forest area in 2020.
- Brazil reported a 50% decrease in deforestation in the Legal Amazon region in 2023 compared to 2022.

Mangrove Forests:

- The global mangrove area stands at 14.8 million hectares, with **South and Southeast Asia contributing nearly 44% of the total.**
- **The gross global mangrove loss decreased by 23% between 2000-2010 and 2010-2020**, although the net change remained negative between 2000 and 2020.

Ongoing Challenges and Threats

Impact of Climate Change:

- **Wildfires:** In 2023, wildfires affected an estimated 383 million hectares, releasing significant amounts of carbon dioxide.
- **Extreme Weather Events:** Climate change-induced extreme weather and sea-level rise threaten mangrove forests and make local communities vulnerable.

Forest Degradation and Pests:

- **Pest Infestation**: **Pests such as the pine wood nematode have caused significant damage in China, Japan, and the Republic of Korea.** In the USA, insects and diseases are projected to cause losses of over 25 million hectares of forest land by 2027.
- **Economic and Ecological Costs**: Quantifying the economic costs of forest degradation, including timber loss and the value of ecosystem services, remains challenging.

Regional Highlights

- **Global Forest Distribution**: **The Russian Federation, Brazil, Canada, the USA, and China account for 54% of the global forest area.** Countries like Australia, the Democratic Republic of Congo, Indonesia, Peru, and India contribute about two-thirds of the global forest area.
- **Deforestation by Region**:
  - Africa: 4.41 million hectares per year.

- South America: 2.95 million hectares per year.
- Asia: 2.24 million hectares per year.

Future Directions

- **Enhanced Monitoring and Action**: Improved monitoring of forest degradation, pest outbreaks, and climate change impacts is essential for better forest management and conservation. **Global collaboration is necessary to curb deforestation** and tackle the challenges of climate change, wildfires, and pests.
- **Policy and Conservation Initiatives**: Countries need to implement robust policies to protect and expand forest areas, promoting sustainable land use and conservation practices. Engaging local communities in conservation efforts is crucial for sustainable forest management.

Conclusion

- The FAO's 2024 report highlights the positive trends in reducing global deforestation rates but also highlights the persistent threats from climate change, wildfires, and pests. It serves as a crucial resource for policymakers, conservationists, and stakeholders to address these challenges and promote the resilience of the world's forests.

5.2 ECOLABELS

Context

- SDG 12 **promotes responsible consumption and production**. Eco-labels can help reduce the ecological impact of consumer goods, contributing to sustainable development without compromising economic growth.

Introduction

- **Eco-labels** are the environmental labelling systems developed to distinguish and encourage the **environmentally sound products** and **services**. They approve product and declare it **environment friendly**, and at the same time they educate the consumers on the **environmental effects** of products that they are consuming.

Importance of Responsible Consumption and Production

- The world economy has continued to expand hence causing depletion of resources and polluting the environment. **SDG 12** therefore calls for sustainable consumption and production patterns as a way of doing things. **Ecolabels** play a pivotal role in this transition by:
  - **Promoting environmental awareness:** In the process of creating awareness to consumers about the effects of their decisions on the environment.
  - **Driving sustainable production:** Promoting the green strategies and practices among the business organizations.
  - **Reducing ecological footprint:** Reduction of inputs and outputs in terms of materials, energy, time and information.

Brief History and Evolution of Eco-labels

- **Eco-labels** originated in the **1970s** with the first one being launched in **Germany** in 1978.
- Later on, **bio-labels** have developed and expanded around the world, where numerous countries and organizations introduced their own bio-labelling systems.

Key Milestones in the Adoption of Eco-labels Worldwide

1978

- Germany launches the first charter mark, the '**Blue Angel**'.

1992

- The European Union begins the **EU Ecolabel**

2000s

- Eco-labels start to gain popularity throughout the world and such countries as **Japan, the United States, and Australia** developed their own systems.

Types of Eco-Labels

Type: Government-led eco-labels

- Description: Developed and managed by government agencies, e.g., **EU Ecolabel**

Type: Private eco-labels

- Description: Developed and managed by private organizations, e.g., **Forest Stewardship Council (FSC)**

Type: Industry-led eco-labels

- Description: Developed and managed by industry associations, e.g., the **International Organization for Standardization (ISO)**

Type: Civil society-led eco-labels

- Description: Developed and managed by non-governmental organizations, e.g., **the Rainforest Alliance**

Benefits of Eco-Labels

Environmental Benefits

- Minimizes the **environmental effects** of the products consumed in the market
- Promotes the use of **environmentally friendly products** in the production line

Economic Benefits

- Fosters the sustainability of **green goods** in the market.
- Pleases consumers with a focus on the **environment**

Social Benefits

- Enhances the understanding of customers on the **environment** and its **protection**.
- Contributes to the attainment of **sustainable development** and sustainable ways of living.

Challenges

- **Lack of knowledge** and thus appreciation of the eco-labels
- Here, the phenomena such as **greenwashing**, and other types of misleading environmental claims.
- Obtaining and maintaining an eco-label can be expensive for companies, especially for small and medium-sized enterprises
- This is due to the fact that there is no set format and there is no consistency in the various **eco-labelling systems**.

Case Study

Blue Angel:

- The **Blue Angel** is an environmental label of **Germany** which is a product specific mark that emphasizes on product safety and environmental standards.
- It was launched in **1978** and is one of the **oldest** and **most famous ecological labels** in the world.
- **Blue Angel** is the ecological certificate that is assigned to goods, which corresponds to certain standards concerning the environmental impact, health and safety.
- It can be used on **cleaners, papers, textile** and **even on electronics**.
- The Blue Angel has evolved into an **environmentally friendly product** standards-setting tool that motivates manufacturers to come up with better products and consumers to make proper decisions.

The Nordic Swan:

- The **Nordic Swan ecolabel** is one of the most popular ecolabels used today that is known for its high requirements and reliability.
- Nordic ecolabel is a voluntary ecolabelling program founded in 1989 which is applicable for products and services in the Nordic countries namely **Denmark, Finland, Iceland, Norway** and **Sweden**.
- The Nordic Swan is a recognized environmental label, which is given to goods that are **environmentally friendly** for all the stages of their life cycle.

Green Rating for Integrated Habitat Assessment (GRIHA):

- **GRIHA** is an accreditation system of **green buildings** in India that evaluates the sustainability of buildings during their entire life cycle.
- Its objectives include reducing the use of resources, generation of wastes, and negative influence on the environment.

Policy Recommendations

- The governments should also review and harmonize the **eco-labelling systems** for the new products and technologies.
- Manufacturers should be encouraged to seek for the eco-label **certification**.
- It is recommended that the creation of more awareness should be taken to the consumer so that they are informed on the existence of eco-labels and their uses.
- The civil society organizations should be encouraged to come up with and popularize eco-labels

Conclusion

- Proper labelling can encourage **green consumerism** and consequently support the goal of the country to achieve **Net Zero by 2070**. The awareness, the updating of norms, and the application of labels ecologically can establish a positive effect as well.

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5.3 GIB RECOVERY PROGRAMME

Context

- The Great Indian Bustard and Lesser Florican are facing challenges such as **habitat loss** and **power line collisions**.
- A detailed conservation program (2024-2029) focuses on protection of these species through **captive breeding and restoration of natural habitat**.

Introduction

- The populations of **Great Indian Bustard** and **Lesser Florican** are **critically endangered** with catastrophic threats in the form of **habitat degradation** and **power line mortality**. A **Conservation Program** (**2024-2029**) aims at breeding the species in captivity and also to extend the habitats of this species.

Details

Reasons for decline:

- The population of GIB has severely declined due to hunting, habitat loss and depredation of eggs by other animals and feral dogs.
- Power line collisions is also the significant cause for the mortality for both species.

Past Initiatives

- **National Bustard Recovery Plan (2013)** to prepare and implement a framework for bustard conservation.
- **Bustard Recovery Project (2016)** to focus on habitat restoration and protection.
- **Tripartite Agreement (2018)** between MoEFCC, Rajasthan Forest Department and Wildlife Institute of India (WII) for the establishment of Conservation Breeding Centres (CBCs).

Great Indian Bustard (GIB) & Lesser Florican Conservation Programme (2024-2029)

Key Activities:

- Complete **upgradation of CBC** at Ramdevra for GIB.
- Developing CBC at Sorsan for Lesser Florican.
- Conducting **population surveys** across range states.
- Implementing **artificial insemination techniques**.
- Release of **captive-bred GIBs** into the wild.

Challenges:

- To ensure habitat security outside protected areas.
- To mitigate power line collisions.
- Balancing conservation efforts with local community needs.

Supreme Court's Intervention

- SC has mandated **underground power lines** in the habitat of GIB in its April 2021 Order.
- In 2024, SC had prioritized **bird diverters** over undergrounding due to cost concerns.

Measures Taken

- **Bird diverters** were installed on power lines to mitigate collision risks.
- **Mapping** of habitat threat by WII over GIB landscape.
- **Sterilization** of feral dogs around Desert National Park to reduce predation.
- **Capturing** and **translocation** of predators.

Great Indian Bustard (GIB)

Status

- Critically Endangered by the IUCN

Population

- Less than 150 individuals

Habitat

- Open landscapes in Kutch and Thar deserts (Rajasthan, Gujarat)

Legal Framework

- Listed in Schedule I of the Wildlife Protection Act, 1972

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Lesser Florican

Status

- Critically Endangered by the IUCN

Population

- Less than 1,000 individuals

Habitat

- Grasslands across Rajasthan, Gujarat, Maharashtra, Karnataka, Andhra Pradesh, Madhya Pradesh

Legal Framework

- Listed in Schedule I of the Wildlife Protection Act, 1972

CAMPA (Compensatory Afforestation Fund Management and Planning Authority)

- It was **established** by the **Supreme Court** to manage funds for compensating forest land diverted for non-forest uses.
- It comprises a **National Advisory Council** and **State CAMPA bodies**.
- Guidelines for state CAMPA and provides technical and monitoring assistance are set by the National Advisory Council.
- State CAMPA funds are being used for afforestation, forest protection, wildlife conservation and infrastructure development related to forests.
- A key objective of CAMPA is to improve the capacity of the Forest Department in **protecting** and **regenerating forests**.

Wildlife Institute of India

- It was **established in 1982.**
- It is an **internationally acclaimed Institution**, which offers training program, academic courses and advisory in wildlife research and management.
- The Institute is actively engaged in research across the breadth of the country on biodiversity related issues.

Conclusion

- As for the Great Indian Bustard and the Lesser Florican, one has to use all possible measures including protection of their habitats; mobilization of the population; and application of fresh ideas in conservation. To continue the process of their recovery and preservation, such commitment is required on a continuous basis.

5.4 AIR POLLUTION IN INDIAN CITIES

Context

- Research highlights the significant mortality risk from **PM2.5 pollution in India's largest cities** and majorly due to emissions from vehicular and industries.

Introduction

- **PM2.5 pollution** largely contributes to a huge heath risk in the largest cities of India because of **automobiles** and **industries** leading to emissions. Therefore, the need to management air quality status and come up with measures that will cushion the effects from happening.

Details

Key Points

- Around **7.2% of daily deaths** are attributed to **PM2.5 pollution** in **10 largest** and most populated cities of India (Delhi, Bengaluru, Mumbai, Ahmedabad, Hyderabad, Kolkata, Pune, Shimla and Varanasi)
- In Delhi, highest fraction of daily and yearly deaths is linked to PM2.5 pollution.
- World Health Organisation **has set guidelines of** 15 µg/m^3 PM2.5 over 24 hours **whereas** Indian Air Quality standards **is at** 60 µg/m^3 PM2.5 **over 24 hours.**

Major Incidents and Milestones

The Bhopal Gas Tragedy

- The **Bhopal gas tragedy** that happened on 03rd December, 1984 stands as one of the biggest industrial catastrophes in the world.

- A leak of toxic gas at the **Union Carbide pesticide factory** in Bhopal, Madhya Pradesh, released toxic gases, **methyl isocyanate,** which led to the death of about 3,787 people on the spot and affected thousands of people.
- The unfortunate event also paved the way to the enhancement of the **air pollution control standards** in India and a major change in the existing laws and regulations on the environment.

Supreme Court Interventions

- The **Supreme Court of India** has played a crucial role in shaping the country's air pollution control measures. Some important Supreme Court interventions include:
  - **M. C. Mehta vs. Union of India (1986):** The Supreme Court passed a number of directions including the closing of polluting industries in Delhi and formation of a pollution control board to look into and oversee the emission of pollutants from industries.
  - **Vellore Citizens' Welfare Forum vs. Union of India (1996):** The Supreme Court ordered the government to set up the national policy on the control of pollution and to implement the measures for decreasing pollution by industrial processes.
  - **Research Foundation for Science, Technology and Natural Resource Policy vs. Union of India (2012):** The government was directed to come up with policies that will lessen pollution from car emissions such as the use of **unleaded fuel** and better emission control standards.
  - **M. C. Mehta vs. Union of India (2016):** The Hon'ble Supreme Court of India ordered the government to prevent pollution from crop burning, and it also requested the government to encourage farmers to follow better methods through incentives.

Current Status

- **Air pollution** still poses a serious threat to human health in the Indian cities, **PM2.5 pollution** being a major contributor.
- The situation with air pollution remains rather critical for Indian cities with many of them exceeding the **WHO's safe PM2.5 concentration limit.**
- There are a number of **national level programs** and policies that have been implemented by the Indian government to combat air pollution, but still more needs to be done to properly control this issue.

Causes of Air Pollution in Indian Cities

- **Vehicular emissions**: The accessibility of motor vehicles in India has been on the rise and this has contributed to a great extent to pollution.
- **Industrial emissions**: Some of the common sources of air pollution include industries particularly the energy and manufacturing industries.
- **Biomass burning**: Smoke from burning of biomass for cooking and heating is a source of air pollution.
- **Fossil fuel burning**: They are exploited for energy production and transport, and this comes with the emission of pollutants into the air.
- **Construction activities**: The construction processes including demolitions and excavations emit pollutants into the air.

Impacts of Air Pollution

- Air pollution has been identified to cause **respiratory diseases, cardiovascular diseases, neurological disorders** and **premature deaths.**
- There are also economic and environmental consequences of air pollution, for instance; loss of revenue in **crop production** and destruction of structures.

Challenges

- Air pollution in India is **largely due to PM2.5**.

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- In **2019**, **over 1.67 million deaths** in India were due to air pollution.
- Respiratory diseases, **cardiovascular diseases**, **neurological disorders** and **premature deaths** were such health impacts.

Government Policies

National Clean Air Programme (NCAP)

- Designed to bring down **PM2. 5 levels by 20-30% by 2024**

Commission for Air Quality Management in National Capital Region (Delhi)

- Responsible for the administration of air quality in the **National Capital Region of India, Delhi.**

Revision of air quality standards

- Frequent adjustment of the AQI standards in a bid to make them tighter

Strengthening of vehicle and industrial emission standards

- Frequently changing the emission standards for vehicles and industries

Way Forward

- **Interstate cooperation** at the level of **airsheds** is necessary for the successful control of air pollution.
- Thus, long-term commitment with **cost-effective plans** is needed to sustain better air quality in the long run.
- The main challenge should be on the shift to **renewable energy sources** in a bid to reduce on the usage of fossil energy resources.
- Case studies:
  - **India Lighthouse Cities Initiative** for sharing of best practices on combating air pollution and the **World Bank's assistance** in air quality enhancement in India.

Conclusion

- Addressing **PM2.5 pollution** in India – Only possible through **collaboration**, strict measures on emission and adopting **green energy**. Thus, it can be concluded that long-term conservation of air quality is essential for achieving high-quality health in society.

5.5 CLIMATE RIGHT

Context

- The latest judgement given by the Hon'ble **Supreme Court of India** in the case of **M.K. Ranjitsinh and Ors. vs Union of India &Ors**. contributes to the elaboration of a new element in the governance of climate change in the country. The verdict has acknowledged **constitutional right not to be inflicted by the ill-effects of climate change**, protected under **Article 21** of the Constitution which enshrines **Right to Life** and **Article 14** which enshrines **Right to Equality**.

Background

- Whether transmission lines could pass through the habitat of the **Great Indian Bustard**, a critically endangered species, **renewable energy** infrastructure has been prioritised by the apex court to fight climate change.

Details

Judgment Overview:

SC Judgment:

- M.K. Ranjitsinh and Ors. vs Union of India & Ors.

Relevant Constitutional Provisions:

- **Article 21: Right to Life**
- **Article 14: Right to Equality**
- The judgment favours **renewable energy infrastructure** to fight climate change even if it means using right of way for electric supply through the preferred breeding ground of the **Great Indian Bustard- a critically endangered species**.

- This has significant consequences since it may result in **climate legal action** and individuals' appeal to the state for protection.

Need for Climate Legislation in India:

- Although legal solutions can be sought individually for protection, **climate legislation** is the only efficient solution that follows a systematic approach.
- **Framework legislation** can create visions, institutions, and adaptation measures, protect ecosystems, and include social justice in climate change.
- Hence, India requires laws that promote **low carbon and climate resilience** as opposed to the UK regulation laws which mainly center on carbon.

Challenges of the Verdict:

- The existence of a **constitutional right** against climate change's harm also presents several questions.
- The government may be pressured to do something on climate change which may be challenging to accomplish.
- Also, it might provoke the increase of the number of **climate-related trials**, which puts pressure on the judicial branch.

Measures/Way Forward:

- To address these challenges, the government can take several measures:
- Create the long overdue **climate change policy** that will include low carbon and climate resilience.
- Put in place structures and policies that will assist in fighting climate change and its impacts.
- Promoting the public to get involve and awareness campaigns that will help in the creation of a society that is resilient to climate change.

Example:

- The **city of Surat**, which is highly vulnerable to climate change, has taken proactive steps to build resilience. The **Surat Climate ChangeTrust** has been established to implement **climate-resilient infrastructure**, promote **sustainable transportation**, and enhance **public awareness**. This initiative can serve as a model for other cities in India.

Conclusion

- The verdict of **Supreme Court** has brought new constitutional aspect to climate management in the country. It also brings out some advantages of the climate change issue in as much as it presents challenges to the government in its efforts towards positively transforming the society to become **climate resilient**. Thus, India can guarantee the future to its citizens and adopt the measures for climate change and produce the **climate legislation** comprehensively.

5.6 SHORT ARTICLES

Jerden's Courser

Context

- The Jerdon's courser, a bird endemic to Andhra Pradesh, is a critically endangered species facing an uncertain future.

About Jerdon's Courser

- The **Jerdon's Courser (*Rhinoptilusbitorquatus*) is a critically endangered bird endemic to southern India,** specifically found in sparse scrub forests with patches of bare ground **within the Sri Lankamalleswara Wildlife Sanctuary in Kadapa district, Andhra Pradesh**.
- It is a **small bird known for its unique features such as two brown breastbands**, a yellow base on the bill, a blackish crown, and an orange-chestnut throat patch.

- It has a buff eyebrow stripe and displays a black tail and white wing bar in flight. **This bird is active during dawn and dusk, with a distinctive call described as "Twick-too... Twick-too" or "yak-wak.. Yak-wak".**
- It remains **critically endangered under the IUCN Red List** due to habitat loss and fragmentation.

Arctic Wildfires

Context

- Trends show that **Arctic wildfires** are on the rise because of **faster warming**, presenting **severe climatic consequences** in terms of **carbon emissions** and **permafrost carbon pool**.

Details

Key Points

- **Wildfires in Arctic** have occurred **three times** in **five years** and darkened the sky.
- **Arctic is warmer** at the present than it was in the past and this rate of warming is much higher than the global average, about **three-and-a-half to four times higher** in fact.
- Wild fires can cause **more lighting** and also **slow-moving polar jet streams**.
- Currently, they estimate that the **carbon amounts to 1,700 carbon billion metric tons** are **stored** in **Arctic permafrost**.
- These disasters can cause permafrost thaw with subsequent emission of a vast amount of carbon into the air.

Arctic Wildfires:

- **Natural Phenomenon:**
  - Wildfires are **part** and **parcel of the Arctic region** boreal forest and tundra biomes.
  - These areas used to have wildfire incidents. But the cases have been witnessed to be frequent and intense in the recent past due to the effect of global warming.

Carbon Derived from Coconut Husks

Context

- **Scientists in Thiruvananthapuram** have found a way of making **activated carbon from coconut husks** for use in **supercapacitors** to improve **renewable energy storage**.

Details

Key Points

- A **new technique of the synthesis** of **activated carbon** from the **coconut husk**.
- **Application of microwave technology** in increasing the rate at which products are produced.
- **Increase in the efficiency** of the **supercapacitors** developed and the **energy storage capacity**.
- Far reaching implication in the provision of **sustainable energy solutions**.

About Supercapacitor:

Definition

- Supercapacitors are **electrical components** with much **higher capacitance** and **storage capacity than capacitors**.

Applications

- They are used in applications that demand **fast charging** and **or discharging** such as in electric cars, renewable energy systems and portable electronics.

Advancements

- **Superiority Activated carbon** derived from coconut husks for use in **supercapacitors** is an **innovation** which may improve on energy storage technologies.

Role of Zinc in Nitrogen Fixation

Context

- The study shows the **importance of zinc in legume crops**, increases **nitrogen fixation** and **crop tolerance**. Research conducted at Aarhus University and Polytechnic University of Madrid.

Details

Key Points

- Zinc helps in nitrogen fixation by converting atmospheric nitrogen into ammonia.
- Legumes forms symbiotic relation with **rhizobia bacteria** that **fixes atmospheric nitrogen** in root nodules.
- **Root nodules** are **sensitive to high temperatures, flooding, drought, soil salinity** and **high soil nitrogen levels**.
- The study also finds a transcription factor i.e. **Fixation Under Nitrate (FUN)** by controlling nodule breakdown when there are high soil nitrogen levels.
- Zinc can be considered as **secondary messenger** because it modulates efficiency of **nitrogen fixation** in response to environmental signals.
- **Agricultural Benefits:**
  - More nitrogen to be available for legume and the following crops.
  - They aid in the reduction of the need for synthetic fertilizers hence lowering the ecological and financial impacts.
  - It improve agricultural production and crops productivity as well as being a climate change mitigator.

Nitrogen Fixation:

- **Nitrogen fixation** is a process where **atmospheric nitrogen (N_2) is converted into usable forms for plants** and other organisms.
- Atmospheric nitrogen cannot be utilized directly by most of the organisms. Therefore, making nitrogen fixation is essential for life on earth.
- **Types of Nitrogen Fixation:**
  - **Biological nitrogen fixation** which is carried out by specific bacteria and **cyanobacteria (diazotrophs)**. For example: **Rhizobium bacteria**, **Azotobacter**
  - **Abiotic nitrogen fixation** which occurs naturally through **lightning strikes** and **ultraviolet radiation** from the sun.
- **Importance of Nitrogen Fixation:**
  - It provides for **continuous supply of usable nitrogen** for plants.
  - It **maintains soil fertility** and supports healthy ecosystems.
  - It **reduces dependence** on synthetic nitrogen fertilizer.

Senna Spectabilis

Context

- Kerala tackles the invasive Senna Spectabilis in Wayanad Wildlife Sanctuary through removal and paper production in order to **restore** the **ecological balance** and **reducehuman-wildlife conflict**.

Current Management Efforts

- Methods like **gridling, kerosene application, debarking** are being applied under the Rebuild Kerala Programme.
- **Collaborative efforts** with Kerala Paper Products Limited to cut down Senna and convert it into paper pulp.
- Similar efforts are also made in **Bandipore** and **Nagarahole Tiger Reserves**.

Senna Spectabilis

Native

- America

Habitat

- Grows in Tropical and Subtropical forests

Conservation status

- Consider as an invasive species in various countries such as Australia, Cuba, India and Uganda
- As per IUCN Red List it is categorised as 'Least Concern'

Some of the other invasive species in India

- Lantana
- Parthenium
- Siam weed
- Mexican devil (Ageratinaadenophora)
- Mesquite (Prosopis juliflora)

Wayanad Wildlife Sanctuary

Location

- It is located in **Kerala** and part of **Nilgiri Biosphere Reserve** and the **Western Ghats**.

Protected Areas Network

- It shares boundaries with **Nagarahole and Bandipore Tiger Reserves** (Karnataka) and **Madumalai Tiger Reserve** (Tamil Nadu).

Tribal Communities:

- Kuruma, Paniya, Kattunaicka, Urali, Kurichiar and Adiyar.

Indian gaur

Context

- The Indian gaur which is **locally extinct for decades** has **reappeared** in the **NSTR** and indicates possible reintroduction efforts to revive its population.

Details

Key points:

- Recently, locally extinct India Gaur has reappeared in **Nagarjunasagar Srisailam Tiger Reserve (NSTR)**, **Andhra Pradesh** after decades.
- Previous sighting was noted in **Amarabad Tiger Reserve**, **Telangana**.
- Agricultural expansion and hunting are primary reasons for extinction.

Indian Gaur

Habitat

- Tropical dry deciduous forests, grasslands and hill forests.

Features

- It weighs around one ton.
- It falls under the category of Mega herbivore (similar to elephants)

Conservation Status

- Listed as Vulnerable by IUCN

Threats

- Habitat loss due to agricultural expansion and deforestation.
- Hunting and poaching.
- Human-wildlife conflicts.

Nagarjunasagar Srisailam Tiger Reserve (NSTR)

Location

- It is located in **Nallamala hills**, an offshoot of the Eastern Ghats on the banks of **River Krishna**.

Flora

- **Southern tropical dry deciduous forests with Teak**, **Anogeissus** as the key species.

Fauna

- It is home for various mammals, birds, reptiles, amphibians etc. Top faunal species include tigers, leopards, wolves, wild dogs and jackals.

Tribes

- **Chenchus** are the major tribe in the tiger reserve.

Palm Tree

Context

- **Odisha** reinstates **palm tree felling** restrictions **to reduce lightning deaths** amid debate over their effectiveness and scientific validity.

Details

Key points:

- **Odisha imposed** and **later withdrew restrictions on palm tree felling** under transit rules, leading to near extinction.
- However, effectiveness of palm trees **in mitigating lightning deaths not scientifically accepted** globally rather **experts advocate for broader protection** of tall trees like **oaksto minimise lightning fatalities**.

Palm Tree:

Family

- Arecaceae

Native to

- Tropical and subtropical regions. They are extensively found in America, Asia, Africa and Madagascar.

Habitat

- mean annual temperatures between 15-21°C, at least 500 mm (20 inches) of rainfall annually

Characteristics

- tall, unbranched trunks topped with large, fan-shaped or feather-like leaves

Endemism

- exhibit high levels of endemism, particularly on islands and in isolated habitats.

APTI PLUS

5.7 SNIPPETS

Topics	Details
New Species discovered	• In 2023, India discovered 641 new species, including new plants and animals. The Environment Ministry launched the **'Fauna of India Checklist Portal.'** • **India- first country** in the world to prepare a checklist of its entire fauna, covering 104,561 species • **Discovery of 641 new species** and **339 taxa of plants** in India in 2023. • **Kerala** and **West Bengal** lead in new fauna and plant discoveries, respectively. • Significant contributions from **Western Ghats** and **North Eastern regions** in new discoveries.
Megafauna	• The 41,000-year-old **ostrich nest** discovery in **Andhra Pradesh** offers significant insights into the extinction of **megafauna** in India. • It is the **world's oldest known ostrich nest** with 9-10 feet wide. • Megafauna **can be classified into three categories** such as **mega-herbivores, mega-carnivores** and **mega-omnivores**. • Ostriches are **native to Africa.** • Ostriches are mainly live in **savannas, arid and semi-arid regions** and open woodlands as they prefer environments where they can run freely to escape predators. • The **Common Ostrich** (Struthio camelus): **Least Concern** • **North African Ostrich** (Struthio camelus camelus): **Critically endangered**
Harimau Malaya	• Malaysian government is implementing strategic actions to conserve the critically endangered Malayan tiger by addressing habitat loss and poaching, with efforts continuing till 2030. • Less than 150 Malayan tigers are remained in the wild up to June 2024, reported by the First National Tiger Survey (2016-2020). • Over 200 years, Singapore had lost 37% of wild flora and fauna, including the Malayan tiger. • Nine strategic actions for conservation approved by the Malaysia's federal cabinet in 2021. • The efforts to continue till 2030 to stop the decline in tiger numbers. • Use of **Orang Asli (oldest inhabitants of the Malay Peninsula) knowledge** to prevent poaching.

Syntrichia Caninervis	• 'Syntrichiacaninervis,' a desert moss, shows **extraordinary resilience to extreme conditions.**
	• It has potential use in establishing sustainable habitats on Mars.
	• It is found in severe desert environments like **Tibet, Antarctica** and **circumpolar regions**.
	• **Resilience Factors:**
	  ○ Tolerates drought
	  ○ Temperatures as low as −196°C
	  ○ High gamma radiation.
	• It surpasses highly stress-tolerant microorganisms.

Xenophyrs Apatani	• Recently scientists have found new frog species, **Xenophrysapatani**, in **Tale Wildlife Sanctuary**, **Arunachal Pradesh**. • The is discovery is significant as it was **misidentified as Xenophrysmaosonensis**. • Genetic studies confirms that Xenophrysapatani is **distinct** from X. maosonensis which are mainly found in **Vietnam** and **China**.

	• Tale wildlife santuary is located in **lower Subansiri district**, Arunachal Pradesh. It lies roughly in between the **Subansiri, Sipu**and**Pange rivers**. • Apatanis are one of the larger tribal groups in **Arunachal Pradesh**. • They are known for their unique practice of **fish-paddy culture**.
Charles Darwin's Frog	• Charles Darwin's frog (*Minervaryacharlesdarwini*) was recently **found in the Andaman Islands.** • Adult males of this species measure around 25–29 mm, while **females are slightly larger at 29–38 mm in length.** • They have distinctive features like rounded snouts, exposed tympanums, and partially webbed toes with swollen discs. • The frogs come in three different colour morphs, ranging from olive brown with orange markings to creamy white with dark patches. • They are **found in evergreen forests below 500 m in elevation** and **lay their eggs in water-filled tree holes.** • They are classified as vulnerable on the IUCN Red List due to their limited distribution, fragmented populations, and declining habitat.
Bohai Sea	• Addition of China's Migratory Bird Sanctuaries along the Yellow Sea-Bohai Gulf (Phase II) to the UNESCO World Heritage List. Newly Added Sites: o **Chongming, Shanghai:** An estuarine wetland that plays a crucial role in supporting migratory birds. o **Dongying, Shandong Province:** The Yellow River estuary is known for its significant wetlands that provide essential habitat for migratory species. o **Cangzhou, Hebei Province:** A wetland area that supports a variety of bird species. o **Dalian, Liaoning Province:** A national-level nature reserve with diverse habitats for migratory birds. o **Yalu River Estuary, Dandong, Liaoning Province:** An important estuarine area for bird migration. • The Bohai Sea, also known as the Bo Sea, **is a gulf/inland sea on China's east coast.** It **connects to the Yellow Sea via the Bohai Strait** and is surrounded by Liaoning, Hebei, Tianjin, and Shandong provinces in China.
Udanti Sitanadi Tiger Reserve (Ustr)	• The **Udanti-Sitanadi Tiger Reserve, located in Chhattisgarh,** was officially designated as a tiger reserve in the fiscal year 2008-09. • The **reserve includes the Udanti and Sitanadi rivers, which flow through these areas,** providing essential water sources for the ecosystem. • **It features Sal forests, mixed forests, and bamboo forests**. It is rich in medicinal plants, which are important for local traditional medicine and potential pharmaceutical use. • **The reserve contains natural teak forests in certain areas**. The reserve contains various tree species, including Bija, Sheesham, Tinsa, Saj, Khamhar, Haldu, Mudi, Kullu, Karra, Senha, Amaltas, and others.

Wangari Maathai Forest Champions Award	• **Nida Collado won the Wangari Maathai Forest Champions Award 2024** for community-focused conservation efforts in the Philippines. • **The Award was established by the Collaborative Partnership on Forests (CPF)** in 2012 to recognize individuals who promote community forest management and engage indigenous communities in conservation efforts. • **CPF is a coalition of 16 international organizations dedicated to enhancing forest management and conservation**. Their mission is to align forest contributions with global development goals, promote sustainable forest management, and strengthen political commitment to these initiatives. • Nida Collado is the President of the Macatumbalen Community-Based Forest and Coastal Management Association (MBFCMA). • **Under Collado's leadership, MBFCMA has reforested 1,450 hectares of degraded land**, safeguarded 400 hectares of standing forests, and restored mangrove ecosystems using traditional knowledge and modern conservation techniques.
Mesembrius Bengalensis And M. Quadrivittatus	• Researchers found **new flower fly species, Mesembrius bengalensis and M. quadrivittatus, in Kerala.** • Flower flies, belonging to the family Syrphidae, are known for their visits to flowers for nectar. **They mimic bees or wasps to avoid predators and play a vital role in pollination.** • **Their larvae contribute to natural pest control** by feeding on aphids and recycling nutrients in the soil.
Last Universal Common Ancestor (Luca)	• A recent study suggests that the **Last Universal Common Ancestor (LUCA) may have emerged around 4.2 billion years ago**, shortly after Earth's formation. • LUCA is the hypothetical ancestor from which all life forms on Earth, including bacteria, archaea, and eukarya. • **LUCA, with a small genome of about 2.5 million bases and 2,600 proteins**, likely developed in a unique environment and played a crucial role in the emergence of other microbes. This early timeline challenges previous evidence of life originating around 3.4 billion years ago, opening up new possibilities for understanding the evolution of life.
Hlogacanthus Sudhansusekharii	• Researchers from the Botanical Survey of India (BSI) discovered a **new species, Phlogacanthussudhansusekharii, in the Itanagar Wildlife Sanctuary in the Papum Pare district of Arunachal Pradesh.** • This species, belonging to the Acanthaceae family and Phlogacanthus genus, is named after Dr Sudhansu Sekhar Dash for his contributions to plant and ecological research in the Indian Himalayan region. • The genus Phlogacanthus, which includes 13 species in India, is **primarily found in the northeastern and eastern Himalayan regions.**
Mcc0200	• Indian scientists at Agharkar Research Institute found the **lactic acid bacteria strain MCC0200, a new probiotic with gut health and cholesterol benefits.** • LAB has various applications, including in food production to enhance sensory properties, as a preservative with antimicrobial effects, and in agriculture for plant growth promotion. • **MCC0200 exhibits antioxidant properties**, reducing oxidative stress and potentially contributing to overall health and longevity. • **The ability of MCC0200 to address issues like high cholesterol and gut**

	health could have significant implications for public health, reducing the incidence of related diseases and improving quality of life.
Pink Bollworm	• Originally from Asia, the pink bollworm first appeared in North India in 2017-18 and has since spread to major cotton-growing districts in Punjab, Rajasthan, and Haryana. • **It causes damage by burrowing into cotton bolls, making them unfit for use.** The adult moth is grey with fringed wings, while the larva is white with pink banding. • **The life cycle involves egg laying and larvae feeding on cotton lint and seeds.** The damage caused by the larvae can lead to further infestations by other pests and diseases. • Control measures include curative techniques like insecticides, as well as preventive methods such as pheromone paste application and PBKnot technology.
Yellow-Legged Buttonquail	• The Yellow-legged Buttonquail, a rare breeding migratory bird, was spotted recently in Ahmedabad. • This small bird, normally 15-18 cm in length, has two recognized subspecies: T. t. tanki in Pakistan, India, Nepal, and the Andaman and Nicobar Islands, and T. t. blanfordii in Myanmar, Indochina, and eastern China. • It **migrates seasonally to drier parts of India and southeastern Russia.** • The bird is found in grasslands, scrublands, and agricultural fields, preferring dense vegetation for nesting and feeding. • **Its omnivorous diet** includes green plant material, seeds, and insects. Breeding occurs mainly during the wet season, with females polyandrous and mating multiple males. • The **IUCN classifies it as "least concern"** due to its wide distribution and stable population.
Wolbachia	• **Wolbachia is a gram-negative bacterium** known for its diverse interactions with arthropods and nematodes since its discovery in 1924. • **It can act as a parasite or mutualistic microbe**, significantly impacting host reproduction and survival. • **It infects a wide range of arthropods**, with significant impacts on host reproduction, including male killing, feminization, parthenogenesis, and cytoplasmic incompatibility. • **Wolbachia also provides benefits to hosts**, such as viral resistance and increased fecundity.
Indian Flapshell Turtle	• The **Indian flapshell turtle is a freshwater species native to South Asia.** • Males reach up to 23 cm, while **females can grow up to 35 cm.** • These turtles are found in Pakistan, India, Sri Lanka, Nepal, Bangladesh, and Myanmar, with some on the Andaman and Nicobar Islands. • **They prefer shallow, quiet waters with sand** or mud bottoms and feed on various aquatic organisms and vegetation. • During droughts, Indian flapshell turtles burrow and move between water holes to survive. **They can also enter estivation, a state of summer dormancy**. • They are **classified as "Vulnerable" on the IUCN Red List** and are protected under the Wildlife (Protection) Act, 1972.

Manjeera Wildlife Sanctuary	• **Manjeera Wildlife Sanctuary in Sangareddy district, Telangana,** may become the state's first Ramsar site. ○ The Ramsar Convention, signed in 1971, aims to conserve and sustainably use wetlands. **82 Ramsar sites in India as of June 2024.** • **It features dry Savanna-type vegetation**, including plant species like Typha, Ipomoea, and Acacia, and agricultural fields surrounding the reservoir and river. • The **region experiences an average temperature ranging from 15°C to 42°C,** with an average annual rainfall of about 915 mm, supporting its diverse ecosystem. • The sanctuary hosts a variety of plant species, including Ipomea, Babool, Prosopis, Vallisneria, and Eichhornia, contributing to the ecological balance and habitat structure crucial for supporting wildlife. • It is **rich in riverine fauna, including the endangered mugger crocodile**, freshwater turtles, prawns, molluscs, and several fish species.

5.8 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

TOPIC NAME	UPLOADED ON IAS GYAN WEBSITE ON:
REPORT BY FISHMIP	17th July, 2024
UNEP FORESIGHT REPORT	17th July, 2024
JOINT CARBON CREDIT MECHANISM	26th July, 2024
AGARWOOD	30th July, 2024
CLIMATE FINANCE TAXONOMY	1st August, 2024
WOODY ENCROACHMENT	1st August, 2024
OIL SPILL	1st August, 2024

6. SOCIAL ISSUES

6.1 INTEGRATED TRIBAL DEVELOPMENT PROGRAMME

Context

- NABARD launched the Integrated Tribal Development Programme in **Kulathupuzha grama panchayat**.
- The project will be carried out by **Thanal**, an environmental organization dedicated to sustainability.

About Integrated Tribal Development Programme

- **Flagship Initiative:** This programme is NABARD's flagship effort aimed at enhancing **tribal livelihoods** sustainably.
- **Development Model:** The initiative is inspired by the **'wadi' model** of tribal development**, a framework refined with support from both national and international development organizations.**
- **Funding Mechanism:** The project is financed through the **Tribal Development Fund**.
- **Fund Objectives:**
  - Develop and replicate effective models of integrated tribal development that engage communities in sustainable income-generating activities tailored to local resources and needs.
  - Strengthen tribal institutions to enable active community participation in policy-making, programme execution, and overall social and economic improvement.
  - Support and build producers' organizations to empower local economies.

Project Goals and Duration

- **Duration and Impact:** This five-year project is designed to significantly improve the livelihoods of tribal families.
- **Beneficiaries:** It targets **413 families** across **eight hamlets**, focusing on enhancing their agricultural and economic activities.

Programme Focus and Components

- **Agricultural Diversification:** The project promotes the cultivation of a range of crops, including **pepper, areca nut, coconut, ginger, Thai ginger, turmeric**, and **plantain**.
- **Livestock and Aquaculture:** Initiatives will also support **goat rearing, poultry farming, beekeeping, fish farming**, and **fodder production**.
- **Development Activities:** The programme encompasses **water resource management**, **leadership training**, **community awareness**, **sanitation and hygiene** efforts, **marketing and branding** training, and **skill development workshops**.
- **Tribal Farmer Producer Company (FPO):** The establishment of a Tribal Farmer Producer Company is planned to bolster economic opportunities for the community.

Community Empowerment and Previous Initiatives

- **Group Empowerment:** Tribal families will be grouped to foster community empowerment, support both agricultural and non-agricultural activities, and boost income through skill development and sustainable practices.
- **Previous Success:** NABARD and Thanal have previously collaborated on **animal husbandry** and **skill development programmes** in **five villages** of **Ranni taluk, Pathanamthitta**, benefiting **429 families** with ongoing guidance and support.

NABARD

- **Institutional Role:** NABARD is a key financial institution established by the Indian government to advance **sustainable agriculture** and **rural development**.
- **Regulatory Authority:** It functions as the primary regulator for the rural banking sector in India.
- **Formation:** NABARD was founded in **1982** under the **National Bank for Agriculture and Rural Development Act 1981**.
- **Objective:** The institution aims to foster agriculture and rural development through **innovative financial and non-financial interventions**, technology, and institutional development.
- **Key Activities:** NABARD provides **refinancing support**, enhances **rural infrastructure**, and oversees the operation of **Regional Rural Banks (RRBs)** and **Cooperative Banks**.

6.2 SC RULING ON ALIMONY FOR DIVORCED MUSLIM WOMEN

Context

- The Supreme Court ruled that **Muslim women** can seek **alimony** from their ex-husbands under **Section 125** of the **Code of Criminal Procedure (CrPC)**.

Case Background

- **Petition by Mohd Abdul Samad**: The case involved Mohd Abdul Samad, who challenged a directive from the **Telangana High Court** to pay ₹10,000 in monthly maintenance to his divorced wife.
- **Family Court Order**: Initially, the family court had ordered ₹20,000 in monthly maintenance, which the high court reduced to ₹10,000.
- **Legal Arguments**: Samad argued that divorced Muslim women should seek maintenance under the **Muslim Women (Protection of Rights on Divorce) Act, 1986** rather than Section 125 CrPC.
- **Supreme Court Decision**: The Supreme Court dismissed Samad's petition, reinforcing that **Section 125 CrPC** should apply. The court had appointed **amicus curiae** Gaurav Agarwal to assist in the matter.

Court Verdict

- The court confirmed that **Section 125 CrPC** applies to all women, regardless of their religion, reinforcing that maintenance is a **right** rather than charity.

Legal Framework and Court's Interpretation

- **Maintenance as a Right:** **Section 125** of the CrPC mandates that **individuals with sufficient means cannot refuse maintenance to their wives, children, or parents.**
- **Gender Neutrality:** The court highlighted that maintenance under **Section 125 CrPC** is a fundamental right and transcends religious boundaries, reinforcing **gender equality** and **financial security**.
- **Role of Housewives:** The court emphasized the importance of recognizing the emotional and practical contributions of **housewives**.

Historical Context and Significance

- **Shah Bano Case (1985):** The initial ruling established that **Section 125 CrPC** applied to all, regardless of religion. This was later modified by the **Muslim Women (Protection of Rights on Divorce) Act, 1986**, which limited maintenance to the **iddat period**.
- **2001 Ruling:** The Supreme Court upheld the 1986 Act's constitutionality but clarified that maintenance obligations extend until a divorced woman **remarries** or becomes **self-supporting**.
- **Recent Ruling:** The latest decision solidifies the right of divorced women to seek alimony under **Section 125 CrPC** and clarifies that if a Muslim woman's application under Section 125 is pending, she can also seek recourse under the **Muslim Women (Protection of**

Rights on Marriage) Act, 2019, which provides additional remedies.

6.3 SC RELEASES GUIDELINES FOR DIFFERENTLY ABLED

Context

- The Supreme Court delivered a landmark ruling, establishing comprehensive guidelines to prevent **stereotyping** and **discrimination** of persons with disabilities (PwDs) in visual media, including **films** and **documentaries**.

Case Background

- **Petition by Nipun Malhotra**: A petition was filed by **Nipun Malhotra**, a disability rights activist, who challenged the film **"AankhMicholi"** for containing derogatory remarks towards PwDs.
- **Film Criticisms**: Specific instances in the film included derogatory terms like **"atki hui cassettes"** (stuck cassettes) and **"bhulakkadbaap"** (forgetful father) directed at people with speech disabilities and memory issues.

Key Points of Judgement

- **Stereotyping and Dignity:** The bench highlighted that **stereotyping** is contrary to **dignity** and **non-discrimination**, and emphasized the judiciary's role in addressing complex issues at the intersection of **disability**, **gender**, and **mental health**.
- **Disabling vs. Disability Humor**: The court differentiated between **disabling humor** that demeans PwDs and **disability humor** that challenges conventional wisdom about disability.
- **Emphasis on Sensitive Representation**: The court stressed the importance of **sensitive and accurate representation** of PwDs to ensure discourse is **inclusive** rather than alienating.

Impact of Stereotyping

- **Detrimental Effects**: The judgment underscored the negative impact of **stereotypes** on discrimination and the enjoyment of fundamental rights. The Court emphasized safeguards against **stereotyping** under the **anti-discrimination code** and **Article 15** of the Constitution.
- **Nuanced View of Disability:** The Court rejected a "**one-size-fits-all**" approach, stressing the need to view disability as a **nuanced** and **individualized** concept.

Guidelines for Media Portrayal

- **Avoid Negative Stereotypes**: Terms that perpetuate negative stereotypes, such as **"cripple"** and **"retard"**, must be avoided as they contribute to a negative self-image and discriminatory attitudes.
- **Accurate Representation**: Media creators must strive for **accurate representation** of medical conditions to prevent **misinformation** and **stereotypes**.
- **Diverse Realities**: Visual media should depict the **diverse realities** of PwDs, showcasing their **challenges**, **successes**, **talents**, and **contributions** to society. The portrayal should avoid presenting PwDs as either **lampooned** or **"super-cripples"** with extraordinary abilities.

Context and Intent in Media Content

- **Context and Message:** The context, intention, and overall **message** of a film must be considered before judging its content. Disabling humor that demeans PwDs should be distinguished from humor that challenges conventional wisdom.
- **Restrictions on Disparaging Language:** Disparaging language that marginalizes PwDs must be approached with caution. The Court emphasized that such representations are problematic as they impair societal treatment of affected groups.

Inclusion of PwDs in Decision-Making

- **Participation Principle**: Decision-making bodies should implement the **"nothing about us without us"** principle, promoting the participation of PwDs and equal opportunities. PwDs should be involved in evaluating media content and its impact on dignity.
- **Training and Sensitization**: Media creators should engage with **disability advocacy groups** and undergo **training** and **sensitization programs** to ensure accurate and respectful portrayals.

Broader Implications

- **Significance of Ruling**: The Supreme Court's ruling is a significant step towards ensuring that media representation of PwDs is **dignified** and **non-discriminatory**. It aligns with the **anti-discrimination** and **dignity-affirming** objectives of the Indian Constitution and the **Rights of Persons with Disabilities Act**.
- **Disability Rights Movement**: The ruling represents a monumental advance in disability rights, building on past legislative and judicial milestones, including the **Rights of Persons with Disabilities (RPwD) Act** of 2016 and notable judgments like **Vikash Kumar Vs Union Public Service Commission (2021)**.

6.4 WELL BEING OF ADOLESCENTS IN INDIA

Context

- On the launch of the report ***"Economic Case for Investment in the Well-being of Adolescents in India,"*** Union Health Secretary, emphasized India's dedication to nurturing and supporting its adolescent population.

Details

- The report builds upon the ***global findings presented in the "Adolescents in a Changing World – The Case for Urgent Investment" report***, released during the 77th World Health Assembly in Geneva.
- It highlights the significant strides made in improving adolescent well-being in India, demonstrating the Government's extensive policies and programs dedicated to promoting the health and overall development of its young population.

Read about World Health Assembly: ***https://www.iasgyan.in/daily-current-affairs/world-health-assembly-8#:~:text=It%20is%20the%20world's%20highest,the%20location%20of%20WHO%20Headquarters.***

India's Adolescent Population

- **India is home to the world's largest adolescent population**, with a staggering 253 million individuals.
- This demographic **is "the backbone of our future," emphasizing their critical role in shaping the nation's progress.**
- Ensuring their health, education, and empowerment is essential for achieving both national and international development goals, including the Sustainable Development Goals (SDGs).
- The government's commitment is directed towards creating an environment that supports adolescents in making informed decisions and contributing effectively to society.

Programs and Initiatives

- **Rashtriya Kishor SwasthyaKaryakram (RKSK):** India's pioneering program designed to address the needs of its vast adolescent population, including males and females from both rural and urban areas, whether married or unmarried, and those in and out of school.

The program has a special focus on marginalized and underserved groups.

- **School Health and Wellness Programme**: Under the Ayushman Bharat initiative, this program seeks to enhance health promotion and disease prevention among school children by utilizing trained teachers. It aims to address the health needs of adolescents in educational settings.
- **Scheme for Promotion of Menstrual Hygiene**: This initiative targets adolescent girls to increase awareness about menstrual hygiene practices and ensure that proper menstrual hygiene products are accessible.
- **Forthcoming launch of the U-WIN platform**, modeled after the Co-WIN platform. This platform is expected to revolutionize the management of health records for children by digitizing these records and improving monitoring and identification of health challenges.

Background and Future Investments

- The ***"Economic Case for Investment in the Well-being of Adolescents in India"*** report underscores the significant **economic advantages of investing in adolescent health and well-being**.
- It identifies seven key programs across various sectors, such as **health, education, child marriage prevention, and road safety, predicting impressive returns on investment**.
- An annual **investment of USD 33 billion is projected to yield returns of USD 476 billion, enhancing India's GDP by an average of approximately 10.1%.**
- The Union Budget for 2024-25 includes **a comprehensive Rs 2 lakh crore package aimed at education, job creation, skill development, and employment-linked incentives.**
- This budgetary allocation **supports 41 million youth across India, reflecting the Government's commitment to investing in the future of its adolescents.**
- The report emphasizes that, while **empirical data are available for seven major intervention programs, further interventions will be needed to fully promote adolescent well-being.**

Conclusion

- India remains **dedicated to addressing the unique challenges faced by adolescents through comprehensive programs focusing on physical health, mental well-being, nutrition, education, and protection from violence and exploitation.**

6.5 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

PRAHARI PORTAL
NAAVU MANUJARU' PROGRAMME
GENDER GAP IN EDUCATION
PARAKH
PARAKH'S 'EQUIVALENCE' REPORT

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7. SCIENCE & TECHNOLOGY AND HEALTH

7.1 QUANTUM NAVIGATION

Context

- In May, the UK carried out two separate quantum navigation tests – one aboard a Royal Navy ship and another on a small jet plane.
- The following month, London's underground transport system became a testing site for the technology.

Details

Quantum Navigation

- Quantum navigation is an emerging technology that leverages quantum mechanics to provide precise location and navigation information.
- **Unlike traditional GPS, which relies on satellite signals, quantum navigation focuses on the behavior of atoms under cryogenic conditions.**
- This technology promises greater resilience against common GPS vulnerabilities such as signal jamming and spoofing.

Fundamentals of Quantum Navigation

- **Core Principle:** Quantum navigation uses the quantum properties of atoms to measure movement and position with extreme precision.
- **Cryogenic Conditions:** Atoms are cooled to near absolute zero to minimize thermal noise and enhance measurement accuracy.
- **Measurement:** The movement of a single atom or a group of atoms is tracked to determine location and velocity. These measurements are highly stable and less prone to drift.

Advantages of Quantum Navigation

- **Unjammable:** Since quantum navigation does not rely on external signals, it is not susceptible to jamming or spoofing.
- **High Precision:** Offers extremely high accuracy in location tracking, potentially surpassing the precision of GPS.
- **Independence:** Operates independently of satellites, providing reliable navigation in environments where GPS is unavailable or unreliable, such as underwater or in dense urban areas.

Challenges

- **Size and Complexity:** Current quantum navigation systems are bulky and complex, requiring significant miniaturization for widespread adoption.
- **Cryogenic Requirements:** The need for ultra-cold conditions makes the technology challenging to implement in standard environments.
- **Cost:** High development and operational costs may limit initial deployment to specialized applications.

Comparison with GPS

Aspect	GPS	Quantum Navigation
Signal Source	Satellites	Atomic measurements
Susceptibility to	High	Low

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Jamming		
Susceptibility to Spoofing	High	Low
Precision	High (within a few meters)	Potentially higher (sub-meter accuracy)
Dependency	External satellite signals	Self-contained, no external signals
Operational Environments	Limited in GNSS-denied areas	Effective in all environments, including underwater
Development Stage	Mature, widely available	Emerging, experimental

7.2 3-D HOLOGRAM TECHNOLOGY

Context

- Japan has issued its first new banknotes in two decades.
- The new yen banknotes are packed with 3D hologram technology to combat counterfeiting.

Details

3D Hologram Technology

- A 3D hologram is a three-dimensional image formed by the interference of light beams from a laser or other coherent light source. It creates the illusion of a 3D object in space.
- **History**:
  - *1947*: Concept proposed by Dennis Gabor, a Hungarian-British physicist, who later received the Nobel Prize in Physics in 1971.
  - *1960s*: Development of the laser enabled practical holography.
  - *1990s*: Advancements in computer technology facilitated digital holography.

Principles of Holography

- **Interference and Diffraction**: Holography relies on the interference pattern created when two light beams (object beam and reference beam) meet.
- **Recording and Reconstruction**:
  - *Recording*: The interference pattern is recorded on a photosensitive material.
  - *Reconstruction*: Illuminating the recorded pattern with the reference beam reconstructs the light waves, creating a 3D image.

Types of Holograms

- **Transmission Holograms**: Viewed with light shining through them, often used in art and security.
- **Reflection Holograms**: Viewed with light reflecting off them, commonly used in holographic displays and credit cards.
- **Hybrid Holograms**: Combine elements of both transmission and reflection holograms.

Comparison between different technologies

Feature/Aspect	3D Hologram Technology	Augmented Reality (AR)	Virtual Reality (VR)	Mixed Reality (MR)
Definition	Creates three-dimensional images visible to the naked eye	Overlays digital content onto the real world	Immerses users in a completely virtual environment	Combines elements of both AR and VR, allowing

				interaction with both real and virtual objects
Key Components	Laser beams, holographic plates, light interference patterns	Cameras, sensors, AR glasses/smartphones, software	VR headsets, sensors, haptic devices, software	MR headsets (e.g., Microsoft HoloLens), sensors, cameras, software
Visualization	Freestanding 3D images viewable from different angles	Digital overlays on the physical world viewed through a device	Complete immersion in a digital environment viewed through a headset	Digital and physical worlds coexist and interact in real-time, viewed through a device
User Interaction	Passive viewing, limited interaction	Interactive, with digital content responding to the physical world	Fully interactive with virtual objects using controllers and sensors	Interactive, with digital and physical objects interacting seamlessly
Applications	Advertising, entertainment, education, medical imaging	Gaming, navigation, industrial maintenance, retail	Gaming, training simulations, virtual tours	Design, prototyping, complex simulations, collaborative workspaces
Hardware Requirements	Holographic display units, specialized projection systems	AR-capable devices like smartphones, tablets, AR glasses	High-performance VR headsets, powerful computing hardware	Advanced headsets with high computational capabilities
Development Complexity	High, due to the need for precise holographic imaging	Moderate, requires integration with physical world data	High, due to the need for realistic and immersive environments	Very high, due to the need to blend real and virtual worlds seamlessly
Market Availability	Limited, emerging technology	Widespread, with various consumer and industrial applications	Growing, with increasing adoption in gaming and professional fields	Emerging, with specialized applications in industry and design
Cost	High, due to advanced technology and equipment	Moderate to high	High, primarily due to the cost of hardware	Very high

7.3 CHILD IMMUNISATION IN INDIA

Context

- The slight dip in India's childhood immunization numbers in 2023, as reported by the World Health Organization (WHO) and UNICEF estimates of national immunization coverage (WUENIC), indicates a need to intensify efforts despite the numbers being relatively stable compared to previous years.

Details

Key Statistics

- **DPT Vaccine Coverage**:
  - **2023**: Coverage of the diphtheria, pertussis, and tetanus (DPT) vaccine was at 93%, a slight decrease from 95% in 2022.
  - **Pandemic Impact**: During the first two years of the pandemic, coverage had dropped to 85% from 91% in 2019.
  - **Global Comparison**: The 2023 global average for DPT vaccine coverage stood at 89%, indicating that India's coverage, despite the dip, was still above the global average.
- **Zero-Dose Children**:
  - **2023**: India had 1.6 million zero-dose children (those who have not received any routine immunization), up from 1.1 million in 2022, but significantly lower than 2.73 million in 2021.
  - **2019**: There were 1.4 million zero-dose children in 2019, showing an increase in 2023.
- **Under-Vaccinated Children**:
  - **2023**: There were 2.04 million under-vaccinated children, slightly lower than the 2.11 million in 2019.
  - **DPT Third Dose Coverage**: This stood at 91% in 2023, a two percentage point drop from the previous year, but much higher than the 2023 global average of 84%.

Implications

- **Call to Intensify Efforts**:
  - Experts emphasize that the slight drop in vaccination numbers is not a cause for concern but a call to enhance immunization efforts.
  - Reaching higher coverage rates (above 90%) requires targeted strategies focusing on detailed planning and addressing specific challenges such as migratory populations, seasonal variations, and reaching remote areas during adverse conditions like floods.
- **Population Impact**:
  - India's large population means that even a small percentage drop translates to a substantial number of under-vaccinated or zero-dose children.
  - This highlights the critical need for sustained and intensified immunization efforts to ensure all children receive necessary vaccines.

India's journey in child immunization

- India's journey in child immunization has evolved significantly since independence, marked by various policies, acts, and schemes to ensure the health and well-being of its children.

Historical Overview

- **Early Initiatives (1950s-1980s)**:
  - **Expanded Programme on Immunization (EPI):** Launched in 1978, this was one of the earliest efforts to provide immunization services in India, focusing on diseases like tuberculosis, diphtheria, pertussis, tetanus, polio, and measles.

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- **Universal Immunization Programme (UIP):** Initiated in 1985, UIP aimed to cover all children by providing free vaccines against six vaccine-preventable diseases. Expanded to include six vaccines: BCG, OPV, DPT, Measles, and later Hepatitis B, Haemophilus influenzae type b (Hib), Japanese Encephalitis, and Rubella. By 1989-90, UIP became part of the Child Survival and Safe Motherhood Programme (CSSM).

- **1990s-2000s**:
  - **Pulse Polio Immunization Programme**: Launched in 1995, this program aimed to eradicate polio byproviding oral polio vaccines (OPV) to all children under five. India was declared polio-free by WHO in 2014.
  - **National Rural Health Mission (NRHM):** Launched in 2005, NRHM aimed to provide accessible, affordable, and quality health care to rural populations, including improving immunization coverage.
- **2010s**:
  - **Mission Indradhanush:** Launched in 2014, this mission targeted unvaccinated and partially vaccinated children in high-risk areas, aiming to accelerate immunization coverage. It resulted in a significant increase in full immunization coverage from 67% to 83% by 2018.
  - **Intensified Mission Indradhanush (IMI):** Launched in 2017, IMI aimed to reach every child under two years of age and pregnant women who had been left out of the routine immunization program.
- **Recent Developments (2020s)**:
  - **Indradhanush 2.0:** Rolled out in December 2019, this phase targeted 272 districts across 27 states to further enhance immunization coverage, focusing on areas with low immunization rates.
  - **Rotavirus Vaccine and Pneumococcal Conjugate Vaccine (PCV):** These vaccines were introduced under UIP to prevent severe diarrhea and pneumonia in children, respectively.
  - **Intensified Mission Indradhanush 4.0-2022:** Conducted to cover unvaccinated and partially vaccinated children, especially those missed due to the COVID-19 pandemic disruptions.
  - **Intensified Mission Indradhanush 5.0-2023**: Extended focus to children up to five years to cover those missing doses of measles-rubella (MR) vaccine, preparing for MR elimination.

Key Policies and Acts

- **National Health Policy (1983, 2002, 2017):** Each iteration of the policy has emphasized the importance of immunization in reducing child mortality and improving child health.
- **National Health Mission (NHM) - 2013:** Includes Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) as one of its components, focusing on improving immunization coverage.
- **Integrated Child Development Services (ICDS) Scheme**: Launched in 1975, ICDS provides health, nutrition, and immunization services to children under six years and pregnant/lactating mothers.
- **National Vaccine Policy (2011):** This policy aimed to develop a comprehensive framework for vaccine production, procurement, and immunization service delivery.

7.4 NCDS AND INFECTIOUS DISEASES IN INDIA

Context

- India is experiencing a significant epidemiological transition characterized by a rise in non-communicable diseases (NCDs) alongside persistent infectious diseases.

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- This dual burden presents unique challenges to the healthcare system, requiring integrated strategies for prevention and management.

Details

Non-Communicable Diseases (NCDs)

- Non-communicable diseases are chronic conditions that are not transmitted from person to person.
- They include cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes.
- NCDs account for a significant portion of morbidity and mortality in India.

Prevalence and Statistics

- **Cardiovascular Diseases**: The leading cause of death, accounting for 28.1% of total deaths in 2016.
- **Diabetes**: India has the second-highest number of diabetes cases in the world, with an estimated 77 million adults affected in 2019.
- **Cancer**: The incidence of cancer is rising, with an estimated 1.3 million new cases diagnosed annually.
- **Chronic Respiratory Diseases**: Conditions like chronic obstructive pulmonary disease (COPD) and asthma are prevalent, with COPD alone affecting over 55 million people.

Risk Factors

- **Lifestyle Choices**: Poor diet, physical inactivity, tobacco use, and excessive alcohol consumption.
- **Environmental Factors**: Air pollution is a significant risk factor, especially for respiratory diseases.
- **Genetics**: Family history can increase the risk of certain NCDs.

Government Initiatives

- **National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke (NPCDCS)**: Launched in 2010, this program aims to prevent and control NCDs through awareness, early diagnosis, and management.
- **Ayushman Bharat**: A comprehensive healthcare initiative that includes health promotion and preventive measures for NCDs.

Infectious Diseases

- Infectious diseases remain a major public health concern in India.
- These diseases are caused by pathogenic microorganisms such as bacteria, viruses, parasites, or fungi and can spread directly or indirectly from one person to another.

Prevalence and Statistics

- **Tuberculosis (TB)**: India has the highest burden of TB in the world, with an estimated 2.7 million cases in 2018.
- **HIV/AIDS**: Around 2.1 million people are living with HIV in India as of 2017.
- **Malaria**: India reported around 338,000 malaria cases in 2018, although the actual number may be higher due to underreporting.
- **Dengue**: Seasonal outbreaks are common, with several thousand cases reported annually.

Challenges

- **Drug Resistance**: Rising cases of drug-resistant TB and antimicrobial resistance are major challenges.
- **Infrastructure**: Inadequate healthcare infrastructure, particularly in rural areas, hampers effective disease management.
- **Awareness and Education**: Lack of awareness and education about preventive measures contributes to the spread of infectious diseases.

Government Initiatives

- **National Tuberculosis Elimination Programme (NTEP)**: Aims to eliminate TB by 2025 through comprehensive strategies including early detection and treatment.

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- **National AIDS Control Programme (NACP):** Focuses on prevention, testing, and treatment of HIV/AIDS.
- **National Vector Borne Disease Control Programme (NVBDCP):** Manages diseases like malaria, dengue, and chikungunya through vector control measures and public awareness campaigns.

Morbidity Trends

A study published in PLOS ONE analyzed morbidity data from the National Sample Survey Organisation (NSSO) for the years 1995, 2004, 2014, and 2018. Key findings include:

- **Overall Morbidity**: Doubled from 56 per thousand in 1995 to 106 per thousand in 2014, but dropped to 79 per thousand in 2018.
- **NCDs**: Prevalence increased more than three times from 8.6 per thousand in 1995 to 30 per thousand in 2018.
- **Infectious Diseases**: Prevalence almost doubled from 8 per thousand in 1995 to 15 per thousand in 2018.

State-Wise Disparities

- **High Prevalence States**: Kerala, Andhra Pradesh, Karnataka, West Bengal, and Punjab have higher prevalence rates for NCDs.
- **Low Prevalence States**: North-eastern states like Manipur, Meghalaya, and Nagaland report lower prevalence rates.

7.5 Li-Fi TECHNOLOGY

Context

- Velmenni, a telecom startup, received a grant from the Ministry of Defence (MoD) under the Innovations for Defence Excellence (iDEX) initiative.
- **Objective:** To strengthen wireless communication specifically for the Indian Navy, addressing unique communication challenges in harsh environments.

Light Fidelity (Li-Fi)

- Li-Fi (Light Fidelity) is a wireless communication technology that uses light to transmit data.
- **Origin:** Coined by Professor Harald Haas from the University of Edinburgh during a TED Talk in 2011.
- Unlike Wi-Fi, which uses radio waves, Li-Fi uses visible light from LEDs to transmit data.

How Li-Fi Works

- **Basic Principle**: Data is transmitted through light by modulating the intensity of the LED light bulb, which is then received by a photodetector.
- **Components**:
  - **LED Light Bulb**: Acts as a transmitter by modulating light intensity.
  - **Photodetector:** Receives the modulated light and converts it back to electrical signals.
  - **Processor:** Decodes the electrical signals into data.
- **Data Transmission**: High-speed on/off switching of LEDs at nanosecond speeds allows the transmission of data.

Advantages of Li-Fi

- **Speed:** Capable of speeds up to 224 Gbps under laboratory conditions.
- **Bandwidth:** Utilizes the visible light spectrum, which is 10,000 times larger than the radio spectrum.
- **Security:** Light cannot penetrate walls, reducing the risk of unauthorized access.

- **Interference:** No electromagnetic interference, making it suitable for environments like hospitals and airplanes.
- **Energy Efficiency**: LEDs are energy-efficient and can serve dual purposes of lighting and communication.

Limitations of Li-Fi

- **Line of Sight**: Requires a direct line of sight between the LED and the receiver.
- **Distance**: Limited range compared to Wi-Fi due to light diffusion.
- **Infrastructure:** Requires installation of LED light bulbs and photodetectors, which may be costly.

Applications of Li-Fi

- **Internet of Things (IoT):** Facilitates communication between IoT devices.
- **Healthcare:** Provides secure and interference-free data transmission in hospitals.
- **Aviation:** Offers high-speed internet in airplanes without causing interference.
- **Underwater Communication**: Enables data transmission underwater, where radio waves are less effective.
- **Smart Lighting**: Integrates data communication with lighting infrastructure in smart cities.

Comparison of Various Wireless Communication Technologies

Feature	Wi-Fi	Li-Fi	Bluetooth	Zigbee
Transmission Medium	Radio waves	Visible light (LEDs)	Radio waves	Radio waves
Frequency Range	2.4 GHz, 5 GHz	400–800 THz	2.4 GHz	2.4 GHz
Data Transfer Speed	Up to 1.3 Gbps	Up to 224 Gbps (theoretical)	Up to 3 Mbps	Up to 250 kbps
Range	Up to 100 meters	Limited to the range of light	Up to 100 meters	Up to 100 meters
Interference	Susceptible to interference	No electromagnetic interference	Susceptible to interference	Low interference
Power Consumption	Moderate to high	Low (LED-based)	Low	Very low
Security	Moderate	High (cannot penetrate walls)	Moderate	High
Infrastructure Cost	Moderate to high	High (installation of LEDs and photodetectors)	Low	Low
Applications	Internet access, IoT	IoT, Healthcare, Aviation, Underwater communication, Smart lighting	Short-range data transfer, Peripheral devices	Home automation, Smart energy, IoT
Standardization	Well-established standards	Emerging, not yet standardized	Well-established standards	Well-established standards
Energy Efficiency	Moderate to low	High (energy-efficient LEDs)	High	Very high
Line of Sight	Not required	Required	Not required	Not required

Mobility	High	Limited	High	High
Latency	Low to moderate	Low	Low	Low
Complexity	Moderate	High	Low	Low

7.6 SHORT ARTICLES

Coalition of Epidemic Preparedness Innovations

Context

- Union Minister Dr. Jitendra Singh inaugurated Asia's first health research-related "Pre-clinical Network Facility" under the CEPI at the Regional Centre of Biotechnology under the aegis of the "Translational Health Science & Technology Institute" (THSTI), Faridabad.

Details

- CEPI has selected BRIC-THSTI as a pre-clinical network laboratory based on its capability to handle BSL3 pathogens.
- It will be the 9th such network laboratory across the globe and the first such laboratory in the whole of Asia.
- The other labs are located in the USA, Europe and Australia.
- The experimental Animal Facility is one of the largest small animal facility in the country with a housing capacity of about 75,000 mice, including immune compromised mice and other species such as rat, rabbit, hamsters, guinea pigs etc.
- The Translational Health Science and Technology Institute (THSTI) is an institute of the Biotechnology Research and Innovation Council (BRIC), Department of Biotechnology under Ministry of Science and Technology.
- It was set up in 2009 and is located in NCR Biotech Science Cluster, Faridabad.

CEPI

- The Coalition for Epidemic Preparedness Innovations (CEPI) is a global partnership formed in 2017 to accelerate the development of vaccines and other biologic countermeasures against epidemic and pandemic disease threats.

Mission and Objectives

- CEPI's primary mission is to develop vaccines for diseases with epidemic potential and to establish platforms for rapid vaccine development.
- **One of their key goals is the "100 Days Mission," which seeks to develop safe, effective, and globally accessible vaccines within 100 days of recognizing a new epidemic threat.**

Funding Model

- CEPI employs innovative funding mechanisms, such as vaccine bonds, to secure and frontload financial commitments from sovereign donors.
- These funds are crucial for supporting long-term vaccine development projects and ensuring readiness for future epidemics.

Breathe Analysers

Context

- The Legal Metrology Division of the Department of Consumer Affairs has introduced new draft rules under the Legal Metrology (General) Rules, 2011.
- These rules are designed to ensure the accuracy and reliability of evidential breath analyzers used in law enforcement and workplaces.

New Draft Rules for Evidential Breath Analyzers

- **Verification and Stamping**:
  - Evidential breath analyzers must be verified and stamped according to the Legal Metrology Act, 2009.
  - Verification ensures the accuracy of the devices, protecting individuals from wrongful penalties due to faulty equipment.

- **Standardized Testing Procedures**:
  - The new rules require standardized testing procedures to ensure consistent and reliable results across different devices.
  - Standardization fosters public confidence in the fairness and accuracy of enforcement actions.
- **Technical Requirements**:
  - The rules outline several technical requirements for evidential breath analyzers:
    1. Displaying only the final measurement result.
    2. Including a printer to record results and ensuring the device does not operate without paper.
    3. Providing additional printed information along with the blood alcohol concentration result.
    4. Reporting results in different formats, such as blood alcohol concentration in blood.
- **Annual Verification**:
  - Evidential breath analyzers must undergo yearly verification to ensure their accuracy during use.

Amoebic Meningoencephalitis

Context

- Amoebic meningoencephalitis, specifically Primary Amoebic Meningoencephalitis (PAM) caused by Naegleria fowleri, is a rare but fatal infection affecting the brain and its surrounding tissues.
- The Kerala government has issued a warning due to increased cases following the continued rains in the region.

Details

Amoebic Meningoencephalitis

- **Amoebic meningoencephalitis** is a rare but serious infection of the brain and its surrounding structures, caused by certain free-living amoebae.
- There are two main forms:
  - Primary Amoebic Meningoencephalitis (PAM)
  - Granulomatous Amoebic Encephalitis (GAE)

Types of Amoebic Meningoencephalitis

Primary Amoebic Meningoencephalitis (PAM)

- **Causative Agent:** Naegleria fowleri
- **Epidemiology:** Commonly found in warm freshwater bodies like lakes, rivers, and hot springs. Mostly affects healthy young individuals.
- **Transmission:** Inhalation of contaminated water through the nose during swimming or other water activities.
- **Incubation Period:** 1-9 days
- **Symptoms:** Severe headache, fever, nausea, vomiting, stiff neck, confusion, seizures, and hallucinations.
- **Progression:** Rapid, leading to death within 5-7 days if untreated.

Granulomatous Amoebic Encephalitis (GAE)

- **Causative Agents:** Acanthamoeba species, Balamuthia mandrillaris, and Sappiniapedata.
- **Epidemiology:** Found in soil, dust, and freshwater. More commonly affects immune-compromised individuals.
- **Transmission:** Through cuts, wounds, or inhalation of contaminated dust or soil.
- **Incubation Period:** Weeks to months
- **Symptoms:** Similar to PAM but with a slower progression. Symptoms include headache, low-grade fever, altered mental status, and neurological deficits.
- **Progression:** Chronic and progressive, often leading to death over several weeks to months.

Metal-Organic Frameworks

Context

- Researchers from Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) in Bengaluru have developed a new quantitative measure of mechanical flexibility for crystals, focusing on Metal-organic frameworks (MOFs).

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Details

Key Findings

- MOFs are **known for their ability to absorb gases and act as filters due to their nanoporous structure.**
- Despite their potential, limited stability and mechanical weakness have restricted their broader application.
- The **traditional measure of flexibility in crystals is the elastic modulus**, which gauges a material's resistance to strain-induced deformation.
- The **new measure, proposed by Professor Umesh V. Waghmare and his team, is based on the fractional release of elastic stress** or strain energy through internal structural rearrangements under symmetry constraints.
- The team's research highlights that **flexibility in crystals arises from large structural rearrangements associated with both soft and hard vibrations, which strongly couple to strain fields.**
- This new understanding moves beyond traditional elastic property-focused studies, establishing flexibility as an intrinsic property of crystals.

Metal-Organic Frameworks (MOFs)

- **Metal-organic frameworks (MOFs)** are a class of porous materials consisting of metal ions or clusters coordinated to organic ligands, forming a three-dimensional structure.
- Known for their high surface area, tunable porosity, and diverse chemical functionality, MOFs have garnered significant attention in various scientific and industrial applications.

Junk DNA

Context

- Researchers at the Garvan Institute of Medical Research have identified potential cancer drivers in the non-coding regions of DNA, commonly referred to as 'junk' DNA.
- Utilizing artificial intelligence, the study opens new avenues for cancer diagnosis and treatment by exploring previously overlooked areas of the genome.

Details

Junk DNA

- **Junk DNA** refers to regions of DNA that are non-coding, meaning they do not code for proteins. Initially, these regions were thought to have no functional purpose, hence the term "junk."
- However, recent research has revealed that many of these sequences play crucial roles in gene regulation, chromosomal structure, and genome evolution.

Types of Non-Coding DNA

- **Introns**: Non-coding sequences within genes that are removed during RNA splicing.
- **Regulatory Sequences**:
  - **Promoters**: Regions where RNA polymerase binds to initiate transcription.
  - **Enhancers:** Sequences that can increase the transcription of associated genes.
- **Repetitive DNA**:
  - **Satellite DNA:** Consists of large blocks of tandemly repeated sequences.
  - **Minisatellites and Microsatellites**: Shorter repetitive sequences, often used in genetic fingerprinting.
- **Transposable Elements**: DNA sequences that can change their position within the genome, potentially creating or reversing mutations.

Functions of Non-Coding DNA

- **Gene Regulation**: Many non-coding regions contain regulatory elements that control when and where genes are expressed. This includes enhancers, silencers, and insulators.
- **Structural Roles**: Non-coding DNA contributes to the physical architecture of the genome. For example, telomeres and centromeres consist of repetitive non-coding sequences essential for chromosome stability and segregation.
- **Genome Evolution**: Non-coding DNA can drive evolution by providing raw material for genetic variation. Transposable elements, for

APTI PLUS

instance, can create new regulatory networks or gene fusions.

- **RNA Molecules**: Some non-coding regions are transcribed into functional RNA molecules (e.g., rRNA, tRNA, and various types of regulatory RNAs such as miRNA and lncRNA).

Chloramphenicol and Nitrofurans

Context

- Drugs Consultative Committee (DCC), advisory to the Central Drugs Standard Control Organization (CDSCO) has recommended ban on Import, production, distribution, and sale of chloramphenicol and nitrofurans for use in food animal production systems.

Details

Antibiotic	WHO Classification	Usage	Regulatory Status in India	Key Reasons for Ban
Colistin	HPCIA	Last-resort antibiotic for multi-drug resistant infections	Banned in 2019	To prevent antimicrobial resistance and preserve its efficacy for human medicine
Chloramphenicol	Highly Important Antimicrobial (HIA)	Broad-spectrum antibiotic for various infections	Recommended for ban in 2024	To prevent misuse and reduce antibiotic-resistant bacteria in food-producing animals
Nitrofurans (e.g., nitrofurantoin)	Important Antimicrobial (IA)	Treatment of urinary tract infections	Recommended for ban in 2024	To address the presence of residues in food exports and enhance food safety

Chapea Project

Context

- NASA's simulation mission saw four volunteers live in a habitat built to replicate conditions on Mars, seen as the most hospitable planet to support life after Earth.
- **A part of NASA's Crew Health and Performance Exploration Analog (CHAPEA) project, it was the first of three planned simulations to understand the challenges Mars poses for space explorers.**

Details

Aspect	*Details*
Project Name	CHAPEA (Crew Health and Performance Exploration Analog)
Objective	To simulate living conditions on Mars and study the effects of long-duration missions on crew health and performance.
Location	Johnson Space Center, Houston, Texas
Habitat	Mars Dune Alpha - a 3D printed airlocked habitat with 1,700 sq ft living space, including bedrooms, bathrooms, a work area, a robot station, a gym, and a vertical farm. An additional 1,200 sq ft space for extravehicular activities.
Duration	378 days (June 25, 2023 - July 6, 2024)
Scenarios	Spacewalks in suits, growing vegetables, facing communication delays, limited resources, and prolonged isolation.

Aims	To collect data on the potential impacts of long-duration missions on Mars, including physical and mental challenges faced by astronauts.
Future Plans	Two more missions planned for 2025 and 2026. NASA aims to send astronauts to Mars by the 2030s.

Shigella

Context

- ICMR has partnered with an Indian vaccine manufacturer to co-develop and commercialize the vaccine.
- The vaccine candidate developed by ICMR's National Institute for Research in Bacterial Infections (NIRBI) has shown robust results in animal studies and is now progressing towards human trials.

Details

Background

- Shigella, a highly infectious bacterium causing shigellosis, remains a significant public health challenge globally, particularly in low and middle-income countries.
- Shigella causes severe diarrheal diseases, particularly in children under five years of age.
- Despite its significant impact, no approved vaccine currently exists.
- The **development of a vaccine is complicated by Shigella's antigenic diversity**, which includes multiple species, serotypes, and sub-serotypes.
- In 2019, ICMR licensed the technology for scaling up and commercializing its Shigella vaccine to MSD-Welcome Trust Hilleman Laboratories.
- The deal fell through due to the COVID-19 pandemic and Hilleman Laboratories' relocation from India to Singapore.

Shigella

- Shigella is a genus of bacteria known to cause an infectious disease called shigellosis, which is characterized by diarrhea, fever, and stomach cramps.
- It primarily affects the intestines and is a significant public health concern worldwide.

7.7 SNIPPETS

Topics	Details
Oropouche Fever	• Italy reported its first-ever case of Oropouche fever on June 15, 2024. • The **World Health Organization (WHO) reported the first-ever outbreak in Cuba** on June 11, 2024, with approximately 70 confirmed cases. • Oropouche fever is an **arboviral illness caused by the Oropouche virus (OROV), which is primarily transmitted by biting midges (Culicoidesparaensis) and occasionally by mosquitoes.** • The disease is prevalent in South and Central America, particularly in Brazil, Peru, and Trinidad and Tobago, but it has recently been detected in new regions, including Europe.
Gestational Diabetes	• A recent study proposes replacing the oral glucose tolerance test (OGTT) with a point-of-care HbA1c test for gestational diabetes screening. • This approach could revolutionize screening by making it more accessible, especially in rural and remote areas. • Gestational diabetes mellitus (GDM) is a type of diabetes that develops during pregnancy (gestation). • Like other forms of diabetes, it affects how cells use glucose (sugar), leading to

	high blood sugar, which can impact both the mother's and baby's health.
New Healthcare And Business Initiatives	**Virtual NQAS Assessment for Ayushman Arogya Mandirs (AAM):** • **Objective**: To ensure quality healthcare services at Ayushman Arogya Mandirs, which are primary healthcare centers under the Ayushman Bharat scheme. • Virtual National Quality Assurance Standards (NQAS) assessments will be conducted online, involving virtual tours and interactions with patients, staff, and community members. • The goal is full compliance with NQAS by 2026. **IPHS Compliance Dashboard** • **Integrated Public Health Laboratories (IPHL)**: Established under the PM-Ayushman Bharat Health Infrastructure Mission (PM-ABHIM) to ensure quality diagnostic services in public health facilities. • **Objective**: To monitor compliance with Indian Public Health Standards (IPHS) in real-time across various public health facilities. **Spot Food Licence and Registration Initiative for Food Vendors** • **Objective**: To enhance the ease of doing business for food vendors by simplifying the licensing and registration process. • Utilizes the Food Safety and Compliance System (FoSCoS), a pan-India IT platform designed to address all food safety regulatory needs. • Introduces instant issuance of licenses and registrations for low-risk food businesses through digital verification.
VEGFR1	• Recent research by scientists at the Indian Institute of Science Education and Research (IISER), Kolkata, has uncovered a novel approach to treating colon and renal cancers by targeting the vascular endothelial growth factor receptor 1 (VEGFR1). • Vascular Endothelial Growth Factor Receptor 1 (VEGFR1), also known as Flt-1, is a tyrosine kinase receptor involved in the regulation of angiogenesis, vasculogenesis, and the permeability of blood vessels. • It is one of three receptors for the Vascular Endothelial Growth Factor (VEGF) family of ligands, the others being VEGFR2 (Flk-1/KDR) and VEGFR3 (Flt-4).
Statistics Day 2024	• On the occasion of Statistics Day 2024, the Ministry of Statistics and Programme Implementation (MoSPI) launched the **eSankhyiki portal**. • This portal aims to enhance the accessibility and usability of official statistics in India. • Statistics Day, **celebrated annually on June 29th in honor of Professor Prasanta Chandra Mahalanobis**, emphasizes the importance of statistics in socio-economic planning and policy formulation. • The theme for Statistics Day 2024 is "Use of Data for Decision-Making".
T Coronae Borealis	• Astronomers are waiting for the fiery explosion of T Coronae Borealis, also dubbed the “Blaze Star” and known to astronomers as “T CrB”. • It is expected to happen in September when a once-in-a-lifetime nova explosion 3,000 light-years from Earth will light up our night sky. • T Coronae Borealis (T CrB) is a binary star system located approximately 3,000 light-years away from Earth in the constellation Northern Crown (Corona Borealis). • It is known for its recurrent nova explosions, making it a significant object of study

	in astronomy.
Olympus Mons	• NASA's Mars Odyssey orbiter captured a remarkable image of Olympus Mons, the largest volcano in our solar system. • The Mars Odyssey mission, operational since 2001, has provided extensive data on Mars' geology, environment, and potential for life. • Mons is a shield volcano, similar in structure to the volcanoes that make up the Hawaiian Islands, but on a much larger scale.
LOFAR	• A team of astronomers has recently discovered a new radio galaxy named J0011+3217 using the LOw-Frequency ARray (LOFAR). • Radio galaxies like J0011+3217 emit significant amounts of radio waves from their central cores. • The LOw-Frequency ARray (LOFAR) (2010) is a revolutionary radio telescope network designed to observe the universe at low radio frequencies. • Operated by the Netherlands Institute for Radio Astronomy (ASTRON), LOFAR is one of the most advanced and versatile radio telescopes in the world.
New Shephard	• Blue Origin has partnered with the Space Exploration and Research Agency (SERA) to provide common Indian citizens the opportunity to experience space travel. • This initiative follows nearly three years of successful tourism flights. • Blue Origin's New Shepard spacecraft, led by Jeff Bezos, is a **suborbital space travel vehicle offering a unique experience for both scientific research and space tourism**. • **Named after Alan Shepard, the first American in space**, New Shepard is designed for brief but remarkable journeys beyond the Karman Line, the boundary between Earth and space. • **First Human Mission:** July 2021, including Jeff Bezos • **Recent Mission:** NS-25 on May 19, 2024, marking the seventh human spaceflight for Blue Origin
World Zoonoses Day	• **World Zoonoses Day** is celebrated annually on July 6, marking the first successful rabies vaccine administered by Louis Pasteur in 1885. • Raises awareness about zoonotic diseases and promotes preventive measures to protect public health. • **Zoonotic Diseases**: ○ *Definition*: Infectious diseases that can transfer between animals and humans. ○ *Examples*: Rabies, anthrax, influenza (H1N1 and H5N1), Nipah, COVID-19, brucellosis, and tuberculosis. ○ *Causes*: Various pathogens, including bacteria, viruses, parasites, and fungi.
Mito Disease	• Scientists are currently preparing for a clinical trial to determine whether mitochondrial donation is safe and effective, following the passage of a law in Australia in 2022 that will allow for the practice. • **Mitochondrial Donation:** An IVF-based procedure that prevents the transmission of faulty mitochondrial DNA, allowing families to have healthy, genetically related children. • Mitochondrial diseases are a group of disorders caused by dysfunctional mitochondria, the organelles that generate energy for the cell. • These diseases can affect multiple organs and systems, including the brain, heart,

	liver, muscles, kidneys, and endocrine system. • Affects 1 in every 5,000 people, making it a common inherited metabolic condition.
Astrophysical Jets	• Scientists have investigated how the composition of plasma affects the dynamics of astrophysical jets, which are outflows of ionized matter emitted as beams from celestial bodies like black holes, neutron stars, and pulsars. • The exact composition of astrophysical jets is unknown; they may consist of electrons, protons, and/or positrons (positively charged electrons). • Understanding jet composition is crucial for pinpointing the physical processes occurring near black holes and neutron stars. • The equation of state (EOS) describes the relationship between thermodynamic quantities like mass density, energy density, and pressure, without considering jet composition. • A new relativistic EOS, partly proposed by scientists from ARIES, incorporates the composition of relativistic plasma and its impact on jet dynamics • Astrophysical jets are highly energetic, narrow beams of matter and energy that are ejected from the regions surrounding certain types of astronomical objects, such as black holes, neutron stars, and young stellar objects. These jets can travel at speeds close to the speed of light and extend across vast distances in space. • Plasma is often referred to as the fourth state of matter, distinct from solids, liquids, and gases. • It consists of a collection of free-moving electrons and ions (atoms that have lost electrons). Plasmas are found naturally in stars, including the sun, and are also created in various industrial and scientific applications.
Nasa's Curie	• NASA launched the CubeSat Radio Interferometry Experiment (CURIE) to study the origins of radio waves emanating from the Sun. • This mission, utilizing low frequency radio interferometry, aims to address the mysterious origins of solar radio emissions, particularly those linked to solar flares and coronal mass ejections (CMEs).
Medevis Platform	• The World Health Organization (WHO) has launched the Medical Devices Information System (MeDevIS), an innovative online platform. • MeDevIS is the **first global open-access clearinghouse for information on medical devices**, aiming to support governments, regulators, and users in the decision-making process related to the selection, procurement, and use of medical devices for diagnostics, testing, and treatment of various diseases and health conditions. • This is the first time WHO has developed such a global repository on medical devices, **based on its experience with the WHO Priority Medical Devices List (MDL),** which itself was based on the experience of creating the WHO Essential Medicines List (EML). • Approaching its 50th anniversary in 2025, EML is regarded as a pillar of public health in countries across the world, supporting health progress and touching billions of lives.
Tirzepatide	• Tirzepatide, a groundbreaking medication by Eli Lilly and Company, is on the verge of transforming obesity treatment in India. • Already approved for managing type 2 diabetes and obesity in the US and Europe,

	tirzepatide has shown promising results in clinical trials. • Tirzepatide is a novel medication designed to improve glycemic control in adults with type 2 diabetes mellitus. • It acts as a dual glucose-dependent insulinotropic polypeptide (GIP) and glucagon-like peptide-1 (GLP-1) receptor agonist, making it unique among diabetes medications.
APSTAR-6E	• China's APSTAR-6E satellite, powered entirely by electric propulsion, has officially begun operating after successfully passing technical reviews both in orbit and on the ground in Hong Kong. • APSTAR-6E is a **geostationary communication satellite** developed by the China Academy of Space Technology (CAST) and ordered by APT Satellite, a Hong Kong-based satellite operator. • The satellite was **launched on January 13, 2023**, using a Long March 2C rocket from the Xichang Satellite Launch Center.
Cave On The Moon	• The recent confirmation of a cave on the Moon near the historic Apollo 11 landing site has significant implications for future lunar exploration and habitation. • This discovery highlights the potential of lunar caves as safe havens for astronauts, offering protection from the Moon's harsh environment. • **Location:** The **cave is located in the Sea of Tranquillity**, about 400 kilometers from the Apollo 11 landing site. • **Characteristics:** The cave is roughly 45 meters wide and 80 meters long, equivalent to 14 tennis courts. It was **identified through analysis of images taken by NASA's Lunar Reconnaissance Orbiter (LRO) in 2010** . • **Formation:** The cave likely **formed from the collapse of a lava tube**, a common feature created by ancient volcanic activity on the Moon.
Newcastle Disease	• Brazil has declared an animal health emergency in the state of Rio Grande do Sul due to the detection of Newcastle disease on a poultry farm. • Newcastle disease (ND) is a highly contagious viral disease affecting birds, especially poultry. • It is caused by avian paramyxovirus serotype 1 (APMV-1), which has multiple strains varying in virulence. • The disease is found worldwide and can lead to significant economic losses in the poultry industry. • Newcastle disease is a minor zoonosis and can cause conjunctivitis in humans who are in close contact with infected birds. However, it is not considered a significant public health threat.
U-WIN Portal	• The U-WIN portal, **the digital platform to record vaccinations, is poised for a nationwide launch by the end of August.** • This portal, **modelled after the Covid-19 vaccine management system Co-WIN,** aims to create an electronic registry of routine immunisations for pregnant women and children under the Universal Immunisation Programme (UIP). • U-WIN is **part of India's Universal Immunisation Programme (UIP), which falls under the Reproductive and Child Health (RCH) Program of the National Health Mission (NHM).** • During the interim Budget for 2024-2025 in February, Finance Minister Nirmala

	Sitharaman emphasised the expeditious rollout of the newly designed U-WIN platform to manage immunisations and support Mission Indradhanush.
Brown Dwarf	• Webb Telescope has provided detailed weather maps of brown dwarfs, revealing blazingly hot temperatures and toxic atmospheric conditions. • Brown dwarfs are astronomical objects with masses between the heaviest gas giant planets and the lightest stars. They are often called "failed stars" because they cannot sustain hydrogen fusion in their cores. • **Mass Range**: Typically between 13 and 80 Jupiter masses. • **Spectral Types**: Classified as L, T, and Y dwarfs, based on their temperatures and spectral characteristics.
Tinzaparin	• A recent study published in *Science Translational Medicine* suggests that tinzaparin, a drug typically used to prevent blood clots, might significantly reduce the damage caused by cobra venom. • The researchers are planning to start human clinical trials soon.
Listeria	• Two significant Listeria outbreaks have been reported in the United States and Canada, resulting in four deaths and several hospitalizations • **Listeria monocytogenes** is a type of bacterium commonly found in soil, water, vegetation, sewage, and feces of animals and humans. • It can contaminate various foods and lead to an infection called listeriosis.
Livermorium	• Scientists have created superheavy element 116, livermorium, using titanium-50. • This achievement will help to create even heavier elements, such as the element 120.

7.8 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

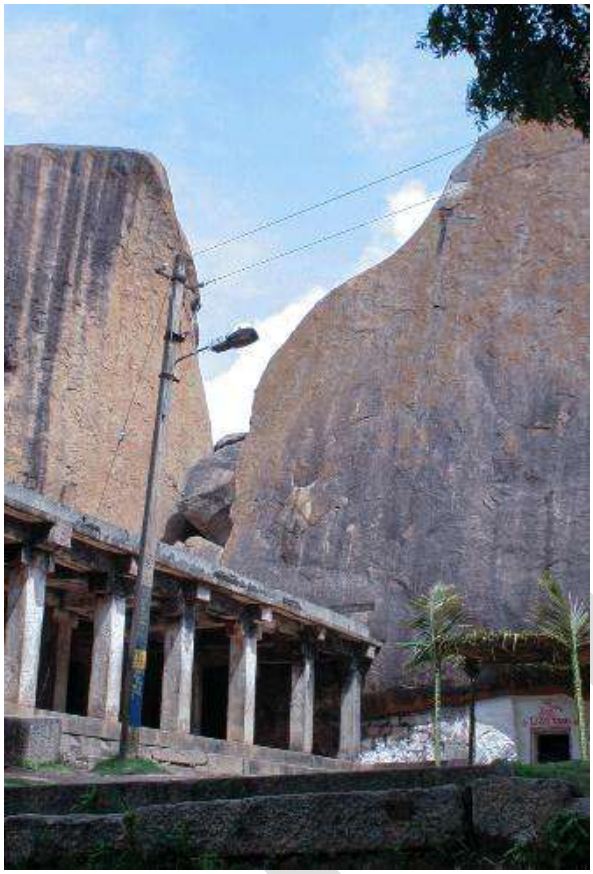
Topics	Date	Topics	Date
Brain Implants	3 July 2024	Chandipura Virus Infection	17 July 2024
Down's Syndrome In Neanderthals	4 July 2024	Environmental Impact Of Solar Cells	22 July 2024
Board Of National Research Foundation	4 July 2024	Gaia Mission	22 July 2024
Global Efforts To Shield Earth From Asteroids	5 July 2024	Indian Science Congress Association	22 July 2024
New Covid Variants	8 July 2024	Ramses Mission And Apophis Asteroid	23 July 2024
National Quantum Mission	9 July 2024	SC Verdict on GM Crops	25 July 2024
Regenerative Braking	9 July 2024	NoVA	27 July 2024
Nociceptor Cells	9 July 2024	Hantavirus	29 July 2024
Black Hole In Omega Centauri Star Cluster	12 July 2024	Cheyava Rock	29 July 2024
Syphilis	16 July 2024	Growth India Telescope	29 July 2024
Chaperone	16 July 2024		

8. CULTURE & HISTORY

8.1 CHANDRAVALLI CAVE

Context

- Remains of dynasties down the ages shine through the interiors of the Chandravalli cave complex in Chitradurga district of Karnataka.



Chandravalli Cave

- **Chandravalli Cave**, is situated in the **Chitradurga district** of **Karnataka**.
- The area is a valley surrounded by three hills—**Chitradurga**, **Kirabanakallu**, and **Jolagudda**—with a semi-arid climate and scrub vegetation, complemented by a stream running through it.

Cave Complex

- The **Chandravalli cave temple**, also known as **Ankali Mutt**, is semi-lunar in shape and located between two large monolithic rocks, about three kilometers from Chitradurga.

Historical Importance

- **Chandravalli Cave**, nestled among the three hills, has yielded significant archaeological finds, including **coins**, **painted ceramic vessels**, and **clay pots** from various historical periods such as the **Hoysala**, **Satavahana**, and **Vijayanagara** eras.
- One of the standout discoveries is a **rock inscription** from **AD 450**, attributed to **Mayurasharma**, the founder of the **Kadamba dynasty**.
- The site also indicates historical connections with **Rome** and **China**, as evidenced by some of the coins found. The cave's walls are adorned with **paintings** made using **organic pigments**.

Kadambas

- The **Kadambas of Goa** were historically subordinate to the **Chalukyas of Kalyana**.
- **Chalukya emperor Tailapa II** appointed **Kadamba Shasthadeva** as **mahamandaleshwara of Goa** for his role in defeating the **Rashtrakutas**.
- **Kadamba Shasthadeva** captured the city of **Chandavara** from the **Shilaharas** in **960 A.D.**
- He later conquered the port of **Gopakapattana** (modern-day **Goa**).
- **Gundayya**, son of **Talara Nevayya**, is believed to have participated in this campaign, securing the port at the cost of his life.

Prehistoric Period

- The site is renowned for its **prehistoric significance**, with evidence of habitation dating back to the **Iron Age** and **Shatavahana period**. **Painted pottery** and various artifacts highlight the early human presence and cultural evolution in the region.

Excavation History

- The excavation of **Chandravalli** began in **1909** under the supervision of **B L Rice**, **R Narasimhachar**, and **R Shamashastry**.
- Notable contributions were made by **M H Krishna** during **1929-30**.
- Further work was conducted by **R. Narasimhachar**, **H. M. Krishna** in **1928-29**, and **Mortimer Wheeler** with the Archaeological Survey of India in **1947**.

Findings

- Excavations revealed two distinct periods: **megalithic** and **Satavahana**. The site has shown **continuous habitation from the Iron Age**, with inscriptions from the **Chalukya** and **Hoysala** periods, including one from **Mayurasharma**.

General Layout

- The excavated site spans **730 m × 730 m** and features a housing complex with **brick walls**, **covered stone drains**, **red-gravel rammed floors**, and **brick fireplaces**. It also served as a **mortuary site**.

Earthen Ware

- Artifacts include **megalithic pottery**, **painted vessels** with russet-colored wash, and various forms such as funnel-shaped lids and three-legged vessels.
- The **paintings** on these wares are characterized by linear and geometric patterns.

Coins

- Coins discovered include those from Indian rulers such as **Krishnaraja Wodeyar III** of Mysore, **Krishnadevaraya** of Vijayanagara, various **Satavahana** kings, and **Viraraya** of Hoysala. Foreign coins include **denarii of Augustus Caesar** and a coin from the **Chinese Han dynasty Emperor Wu Ti**.

Trade Ties with Ancient Rome

- Findings suggest **Chandravalli** had trade connections with the ancient Roman world, as evidenced by the Roman coins and artifacts discovered.

Other Objects

- Additional items found include **neoliths**, a **cist** containing a skeleton, pots with animal bones and teeth, and a **Roman bulla**. Some cists also seemed to contain parts of a **sarcophagus**.

8.2 SHORT ARTICLES

Charaideo Moidams

Context

- The **Charaideo Moidams**, a unique 700-year-old mound-burial system of the **Ahom dynasty** from **Assam**, has been added to the **UNESCO World Heritage List**.

About Charaideo Moidams

- **Historical Tradition:** Represents the late medieval (13th-19th century CE) mound burial tradition of the **Tai Ahom** community.
- **Location:** Charaideo, over 400 km east of **Guwahati**, was the first capital of the Ahom dynasty, founded by **Chao Lung Sukaphaa** in **1253**.
- **Burial Practices:** The Ahoms preferred to bury deceased family members at **Charaideo**, where the first king **Sukapha** was laid to rest. Historical chronicles note that **wives, attendants, pet animals, and valuables were buried with the departed kings.**
- **Transition:** After the 18th century, the Ahom rulers adopted the **Hindu method of cremation** and began entombing the cremated bones and ashes in a moidam at Charaideo.

- **Preservation**: Out of 386 moidams explored, 90 royal burials at Charaideo are the best preserved and most representative of the Ahom mound burial tradition.

Architectural Details

- **Structure**: Comprises a massive underground vault with one or more chambers having a domical superstructure.
- **Appearance**: Externally appears as a hemispherical mound covered by a heap of earth.
- **Pavilion**: A small open pavilion (**chow-chali**) is provided at the top of the mound.
- **Enclosure**: An octagonal dwarf wall encloses the entire moidam.

Significance of this Addition

- **UNESCO Recognition**: Moidams have become the 43rd property from India included in the UNESCO List, making India the 6th globally for the most World Heritage Properties.
- **Cultural Recognition**: First site from the **North East** to be recognized as a World Heritage Site in the cultural category.
- **Other Sites in Assam**: Assam also has **Kaziranga National Park** and **Manas National Park** as World Heritage Sites in the natural category.

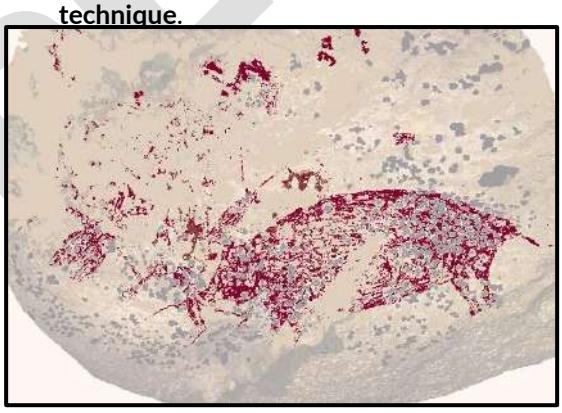
Who were the Ahoms?

- **Ethnic Group**: The Ahom, or **Tai-Ahom**, are an ethnic group from Assam and Arunachal Pradesh in India, descendants of the Tai people who first came to Assam's Brahmaputra Valley in 1228.
- **Cultural Mix**: The current Ahom people and culture are a blend of ancient Tai people and indigenous Tibeto-Burman cultures.
- **Empire**:**Sukaphaa**, the Tai group's leader, **founded the Ahom empire (1228–1826 CE)**, which ruled the Brahmaputra Valley **until annexed by British India in 1826 (Treaty of Yandaboo).**
- **Celebrated Ruler**: **Lachit Borphukan** (1622-1672) is the most celebrated ruler of the Ahom Dynasty.

World's Oldest Cave Art

Context

- Researchers have discovered the **world's oldest known figurative cave painting**, dating back **51,200 years**, using a **new dating technique**.



Location and Description

- The painting was found in the **Leang Karampuang cave** on the **Indonesian island of Sulawesi**.
- It depicts a **pig in red pigment** with its mouth partially open and three **part-human, part-animal stick figures**, or **therianthropes**.

Details of the Painting

- One figure appears to be holding an object near the pig's throat.
- Another figure is above the pig's head in an **upside-down position** with legs splayed out.
- The third, larger figure, possibly wearing an **elaborate headdress**, is holding an unidentified object.

- The arrangement of these **human-like figures** and the pig suggests a dynamic scene, indicating a **narrative**.

Significance of the Painting

- The study indicates that **figurative portrayals** of **anthropomorphic figures** and **animals** have deeper origins in human history than previously recognized.

Archaeological Implications

- Neanderthals began marking caves about **75,000 years ago**, but these were typically non-figurative.
- The depiction of anthropomorphic figures interacting with animals in the **Sulawesi cave art** during the **Late Pleistocene** suggests a rich **culture of storytelling** and **scenic representation** developed much earlier in human history in this region.

The New Dating Technique: Uranium Series Analysis

- The new dating technique involves **uranium series (U-series) analysis** of calcite deposits overlying the rock art.
- **Laser beams** compare the ratio between the **parent isotope (uranium)** and the **daughter isotope (thorium)** to date the paintings.

Additional Findings

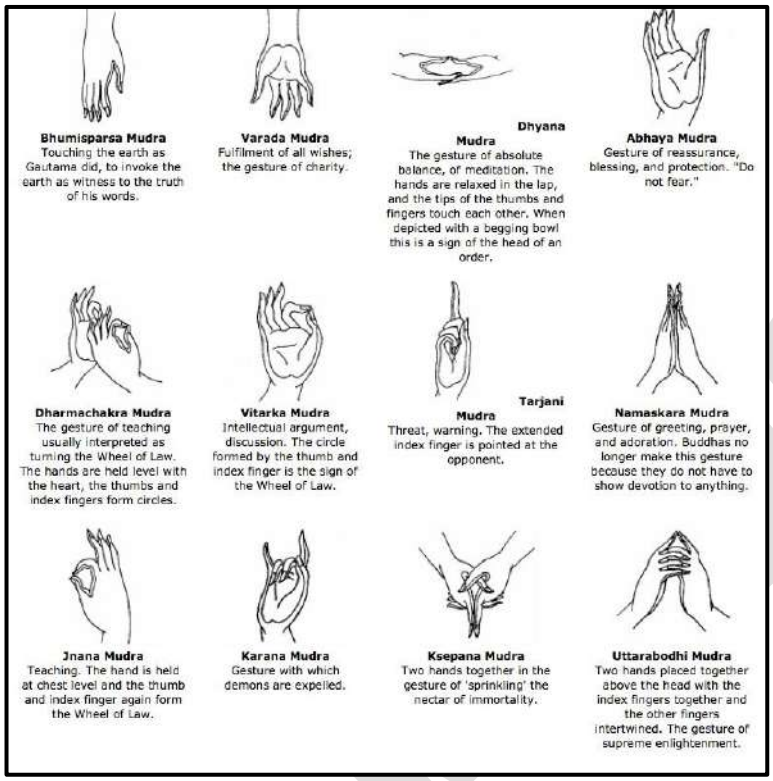
- Using this method, researchers also re-dated another **hunting scene** at **Leang Bulu' Sipong 4**, initially believed to be **43,900 years old**, and found it to be at least **4,000 years older** than first estimated.

Advantages of the Technique

- This method helps establish an unambiguous relationship between the **calcium carbonate material** used for dating and the **rock art pigment layer**, ensuring more accurate dating.

8.3 SNIPPETS

Topics	Details
Nouka Baich (Nowka Bais)	• Nouka Baich Boat Races are set to commence in rural West Bengal. • Dragon boat-style sport from Bangladesh. • **Held in Murshidabad, Nadia, North, and South 24 Parganas**, West Bengal. • Uses multiple traditional boat types: **Sorengi, Chhip, Kaile Bachhari, Chande Bachhari, Chitoi, Sorpi.** • Reflects shared Southeast Asian maritime heritage **(China, Vietnam, Cambodia, Bangladesh).**
Abhaya Mudra	• Rahul Gandhi, in his maiden address as Leader of Opposition in Lok Sabha, invoked the Abhaya Mudra, **a gesture characterized by an open raised palm signifying reassurance and freedom from fear.** • **Origin and Symbolism:** Roots in Hinduism, Buddhism, Jainism, Islam, and Christianity. • **Universal Symbol:** Seen in gestures of Lord Shiva, Guru Nanak, Jesus Christ, and other revered figures, embodying courage and compassion.



8.4 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

JAGANNATH TEMPLE	NATIONAL FLAG DAY
ASHADHI BIJ	KALARIPPAYATTU
PROJECT PARI	CULTURAL MAPPING INITIATIVE
COMMEMORATIVE COIN	SANGAMESWARA TEMPLE
KHARCHI PUJA	UNESCO ENDANGERED SITES
VISHNUPAD AND MAHABODHI TEMPLES	TELL UMM AMER
BASTILLE DAY - FRENCH REVOLUTION'S LEGACY	JULY 4 DECLARATION OF INDEPENDENCE
UNESCO WORLD HERITAGE EDUCATION PROGRAM	KOREAN WAR
VISHALGAD FORT	INDIA'S FIRST UNESCO 'CITY OF LITERATURE'
BHOJSHALA-KAMAL MAULA COMPLEX	

9. GEOGRAPHY & DISASTER MANAGEMENT

9.1 SHORT ARTICLES

Saryu River

Context

- An artificial lake formed in the Saryu River remains a "significant threat" as efforts to drain it have failed for the second consecutive day.

Introduction

- The rivers Sarayu has mythological and religious importance, is a part of the Ganga Brahmaputra Meghna (GBM) Basin.

Description

Origin and Nomenclature

- Lake Mansarovar in the Himalayas.

Other name

- Ghaghra,Manas Nandini,Sarju River.

Length

- 350 Km.

Vegitation of catchment area

- Temperate and sub-Tropical forests

Geographical Coverage

- Central Kumaon region of Uttarakhand and Uttar Pradesh.

Tributaries

- **Right bank** – Gomti, pannar , Lohar and **Left bank** – Ramganga and Punger.

Tributary of

- Sharda River (merges at Pancheshwar at the India-Nepal border)

River Bank cities

- Kapkot, Bageshwar and Seraghat - Uttarakhand.
- Ayodhya- Uttar Pradesh.

Famous Ghats

- Bhuni, Sup, and Khati

Threats to the River

- Sewage, hazardous wastes from twin cities of Ayodhya and Faizabad.

Humid Heat Extremes

Context

- People in India exposed to extreme levels of humid heat during monsoons increased by at least 67 crore over the period 1951-2020, a research has found.

Introduction

- In general, there are two kinds of heat: dry heat, in which relative humidity levels are at or below 40%, and humid heat, in which relative humidity levels are above 40% and can reach (rarely) 100%.

Humid Heat

- Results from high temperatures and high moisture in the air. (above 32.2 C and a **relative humidity of 40% above).**
- Tends to be more dangerous as the moisture does not evaporate as efficiently, making it harder for the body to cool off ,so more heat remains in the body.
- "feel" hotter than the same temperature in a dry environment.
- Commonly associated with **tropical areas.**

Dry Heat

- Combination of a temperature of **32 ° C or above** and relative humidity of **40% or less**.
- Allows the body to cool **more quickly**, so less likely to get heat stress in an arid environment.
- Usually feel cooler in dry air as it has less moisture.
- Occurs most often in **desert climates** and areas receive very **little rain and moisture**

Recent Findings

- Global warming has significantly increased days of **hot-and-humid extremes** to 10 between 1951 and 2020.
- Study find a 3 degrees Celsius increase in global warming **can reduce labour productivity by 7 per cent** and contribute to

at **least 4 per cent reduction of GDP in India**, which leads to **inflation** in crop price.

Pantanal

Context

- Pantanal has lost the most water since 1985, says study.

Introduction

- The Pantanal Wetland is a natural region encompassing the world's largest tropical wetland area, and the world's largest flooded grasslands.

location

- South American continent.

Geographycally Spreads over

- 42 million acres land.

Politically Spreads over

- **Brazil (80 percent), Bolivia and Paraguay (20 percent)**

Formation

- Developed in a structural basin formed as the **Andes Mountains rose**

River Flows

- **Paraguay River feeds it.**

Ecological significance

- **Ecosystem services** are valued at **$112 billion a year**.
- providing ideal aquatic habitat, nutrient renewal, groundwater recharge and flood control for millions of people downstream. Accounts for **2% of the Brazil** total water surface. More than **4,700 plant and animal species.**

Flora

- Referred to as the **"Pantanal complex".** Amazonian rainforest plants, semiarid woodland plants, Brazilian cerrado savanna plants and plants of the Chaco savannas of Bolivia and Paraguay.

Fauna

- **largest** and **healthiest jaguar (Panthera onca) populations**.
- Home to the **world's largest rodent**, the **capybara**

Recent Findings

- **It has lost the most water since 1985. In 2023 was 50 per cent drier than 2018**. Over 10x as many fires in this global biodiversity hotspot.

Initiatives for conservation

- **Pantanal Pact**: aims to conserve the rivers and springs through unified collaboration across 25 municipalities in Mato Grosso state.

The Cauvery River

Context

- The Karnataka state government has established a nine-member committee to investigate the contamination of the Kaveri River and propose solutions to address the issue.

Details

Origin

- Talakaveri in Coorg District of Karnataka, Brahmagiri Range, Western ghats, elevation of 1341 m.

Length

- **800 Kms**

Basin

- **85,000 km2, 2.7% geographical area of the country, Tamil Nadu (55.44%), Karnataka (41.23%), Kerala (3.33%).and Pondicherry.**

Length(State)

- 320 km-Karnataka, 416 km-Tamil Nadu and 64-km common boundary between Karnataka and Tamil Nadu States.

Tributaries

- **Left Bank**: Harangi, Hemavati, Shimsha, Arkavati.
- **Right**:Lakshmantirtha,Kabbani, Suvarnavati, Bhavani, Noyil, Amaravati .

Distributaries

- Nattar, Vanjiyar, Noolar, Arasalar, Thirumalairajanar, Puravadaiyanar

outfall

- Bay of Bengal.

Soils of the basin

- Black soils, red soils(**largely)** , laterites, alluvial soils **(delta areas**), forest soils

Receives rainfall

- S-W Monsoon and partially from **N-E Monsoon(Tamil Nadu region).**

Bounded by

- Krishna basin on the Northern side and Palar basin on the Southern side.

National Parks

- **Bandipur National Park, Nagarhole National Park and Bannerghatta National Park.**

Waterfall

- Shivasamudram (Second largest of India), Hogennekkal

Gorge

- "Mekedatu"(Goats leap).

Riverin island

- **Srirangam Island**

Dam and Projecs

- Grand Anicut" know as **Kallanai Dam, Krishnaraja sagar dam**, Nugu, Mettur.

Mythology

- **"Dakshi Ganga' or 'the Ganga of the South'**

West Antarctica

Context

- Antarctica's two sides formed millions of years apart: study

Introduction

- Antarctica is divided into West Antarctica and East Antarctica by the Transantarctic Mountains, which stretch from Victoria Land to the Ross Sea.

Location

- **Western Hemisphere**.

Other name

- Lesser Antarctica.

Surrounded by

- Ross Sea and the Weddell Sea and Antarctica Peninsula

Covered by

- West Antarctic Ice Sheet (world's largest marine ice sheet), is bounded by the Ross Ice Shelf, the Ronne Ice Shelf.

Imp. Glaciers

- Thwaites (**Doomsday Glacier**) and Pine Island Glacier.

Composed of

- Younger, volcanic and **sedimentary rock** as part of the "**Ring of Fire,".**

Highest and lowest point

- **Vinson Massif** (Mount Vinson) at 4892 metres and the **Bentley Sub glacial Trench** is the **lowest point** . Both are also highest and lowest point of overall Antarctica.

Recent finding

- Antarctic ice activated roughly 34 million years ago but West Antarctica started to permanently glaciate– at **least seven million years**.
- West Antarctica was ice-free in the **first glacial maximum** instead it was enveloped by **dense broadleaf forests and a cool-temperate climate**. This helped prevent the formation of ice.
- The Antarctica as a whole lost more **than 3 trillion tons of ice between 1992 and 2017**. Most of **that came from West Antarctica**

Beki River

Context

- Beki River changing course, displacing state highway a study by Down to Earth.

Details

Origin

- **Mountain Reserve Forest at Mathanguri.**

Other name

- **Kurisu river in Bhutan.**

Flow

- North to South direction.
- Large portion flows in Indian state Assam.
- Flows through the **Manas National Park.**

Tributary of

- **Right bank** tributaries of the Brahmaputra River.

Climate

- From hot and humid subtropical conditions in the south to cold and dry alpine conditions in the north.

Morphological dynamics

- The soil is porous, **Bhabar belt.**

- **Alteration of direction** of flow due to **neck cut off**, **widening of channel and progressive shifting of meander bends.**
- Bank is being eroded during its **meandering course.**

Vulnerability

- landslide in catchment area causing sudden rise in the **silt load,impact of seismic activity** in bed slope.
- Sudden flooding due to water release from **Kurichu dam.**
- During the monsoon, the Beki swells up and is hard to predict.
- Caused severe erosion in the **Manas National Park upstream.**

Consequence

- Houses and trees near the river and National Highways and roads were swallowed by floodwaters due to erosion.

Mitigation

- Effort to control the erosion of the Beki River in the area, the government's water resources department constructed a geo-bag dam.

Pangong Tso Lake

Context

- Satellite images reveal China's military build-up near Pangong Lake, India's western border.

Details

Located

- Ladakh Chinese border at an altitude of over 14,000 feet. Indian (One-third)and China (two-third).
- Line of Actual control passes through it.

Name

- Tibetan word, "**Pangong Tso", which means "high grassland lake".**

Length

- 135-km long

Characteristics

- **World's highest brackish water lakes.**
- During the winter, the lake surface freezes completely.
- Showcases **different shades of blue, green, and sometimes even red, depending on the angle of the sunlight** and the weather conditions.

Wildlife

- **Perennial herbs.**
- **Birds including migratory birds.**
- **Bar Headed Geese and Brahmini ducks** are commonly seen here.
- **Freshwater snails of genes Radix.**

Other Facts

- It is in the process of being designated as a wetland of **international importance under the Ramsar Convention**, if declared this will be the first trans-boundary wetland in South Asia under the convention.

Gandaki River

Context

- A 15-year-old bridge over the Gandaki River collapsed in Bihar's Saran district on 4 July, A PIL has been filed in the Supreme Court seeking directions to the Bihar government to undertake a structural audit.

Details

Origin

- Dhaulagisi in Tibet near Nepal border.

Names

- **Narayani River in Nepal.**

Formed by

- Union of the Kali and Trisuli rivers.

Confluence

- Called Triveni with rivers Pachnad and Sonha descending from Nepal.

Length

- 630 kilometers, with 445 kilometers running through India and 185 kilometers in Nepal.

Drainage Basin

- **29,705 square kilometres.**
- Flows through the Indian states of **Bihar and Uttar Pradesh**, and joins the Ganges near Patna just downstream of Hajipur.
- The basin also contains three mountains over 8,000 m (26,000 ft), namely **Dhaulagiri, Manaslu and Annapurna Massif**.
- **Dhaulagiri** is the **highest point of the Gandaki basin**

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Tributary of

- Left bank tributary of the Ganges in India.

Major tributaries

- Mayangadi, Bari, Trisuli, Panchand, Sarhad, Budhi Gandak.
- **Note:** There are **no tributaries in the Gandak River in Indian Part**, only diversions

National Parks

- **Nepal-Chitwan national Park and India-Bihar Valmikinagar National** Park.
- These both parks are famous for **Rhinoceros and Tiger.**

National Waterway

- **National Waterway (NW)-37** from Bhaisalotan Barrage to Gandak and Ganga river confluence at Hajipur along with **111 NWs** in the country vide **National Waterways Act, 2016**.

Mythological Significance

- Mentioned in the **ancient Sanskrit epic Mahabharata.**
- Ammonite fossils collected from the bed of the Gandaki River at a place close to **Saligrama or Muktinath** ("place of salvation") in Nepal are known as **shaligrams or shilas** and are considered an **iconic representations of Vishnu.**

Siang River

Context

- Locals are protesting against the Upper Siang hydropower project in Arunachal Pradesh.

Details.

Origin

- **Mansarovar Lake in Tibet**

Name

- **Tsangpo River**(Tibet), **Siang** (Arunachal Pradesh), **Brahmaputra, Jamuna**(Bangladesh)

Flow

- Tibet, Arunachal Pradesh(enter near **Namcha Barwa peak**)

Length:

- **2,900 km.**

Tributaries

- **North:** Subansiri, Ronganadi, Dikrong, Buroi, Borgong, Jiabharali, Dhansiri (North) Puthimari, Manas, Beki, Aie, Sonkosh.
- **South:** Noadehing, Buridehing, Desang, Dikhow, Bhogdoi, Dhansiri (South), Kopilli, Kulsi, Krishnai, Dhdhnoi, Jinjiran.

Basin features

- flatter grades, fine alluvial soils, comparatively low silt charge, and deep meandering channels.

Navigation

- **National Waterway 2**

Riverine Island

- **Majuli Island**

Canyon

- **World's largest and deepest canyon** at an altitude of more than 1,500 meters (4,900 feet), **YarlungTsangpo Grand Canyon**.

Hydropower project

- **Upper Siang** is a 11,000MW hydro power project. Likely to commence in 2029.

World Population Day

Context

- World Population Day, observed on July 11, aims to raise awareness about global population issues and their impact on society.

Details

Establishment

- By Governing Council of the United Nations Development Programme in 1989.
- The Day of Five Billion, which was observed on 11 July 1987.

UN Resolution

- **45/216 of December 1990.**

First Observed

- **11 July 1990 in more than 90 countries.**

Significance

- Serves as a reminder that growing population **presents both challenges and opportunities.**

World Population Day 2024

- **Theme:** "**Leave no one behind, count everyone**"

Word Population Trends

- In 2011, the global population reached the **7 billion mark.**
- **On 15 November 2022, the world's population reached 8 billion people.**
- It's expected to grow to around 8.5 billion in 2030, 9.7 billion in 2050, and **10.9 billion in 2100.**
- **China (1.4 billion) and India (1.4 billion) remain the two most populous countries of the world**

Growth Factor

- **Changes in fertility rates.**
- Average global **life spans have risen, from 64.6 years in 1990s to 72.6** years in 2019.
- Urbanization and Migration: **by 2050 about 66 per** cent of the world population will be living in cities.

Implications

- Affect economic **development, employment, income distribution, poverty and social protections.**
- Affect efforts to ensure universal access to **health care, education, housing, sanitation, water, food and energy.**

Bagmati River

Context

- Flood situation have emerged in Bihar's Muzaffarpur area as water level of Bagmati River has risen.

Details

Origin

- **Shivapuri Hills** to the north of Kathmandu, Nepal.

Flows through

- **Kathmandu Valley, Chobhar gorge (Mahabharat range, lesser Himalaya), Cross lower Sivalik Hills, Reaching the Terai Reion.**
- **In India it flows It flows across the** districts Darbhanga, Sitamarhi, Sheohar, Muzaffarpur and **Khagaria in Bihar.**

The basin

- Lies between **Gandaki basin to the west and the Koshi basin to the east**.

Length

- 586.3 km.

Major tributaries

- Left Bank: **Manohara, Marin Khola, Lakhandei, Adhwara, Kamala**
- Right Bank: Lalbakaiya, Bishnumati.

Out fall

- Narayani River and enters into the Ganges.

Projects

- Bagmati barrage and **Kulekhani Hydropower Plant**.

Religious and Historical Significance

- Considered holy by both Hindus and Buddhists.
- Source of Nepalese civilization and urbanization.
- Major shrines: **Pashupatinath Temple , Gokarneshwor Mahadev temple, Koteshwor Mahadev temple.**

Major threat to the river.

- **Untreated sewage, cremations**.
- **Major threat from the River**
- Flood. Eg- - A major flood disaster has occurred in Bagmati river basin on **19-21 July, 1993.**

Sutlej River

Context

- Sutlej reduced to a rivulet due to constructions: Supreme Court Judge raises concerns.

Details

Rises and Fall

- **Lake Rakshastal** in southwestern Tibet and drain out in Arabian Sea.

Other Names

- **Satadree (Ancient name), Zaradros (Ancient Greek), Langchen Khambab** (Tibet/China).

Geology

- Antecedent (existed before the upliftment of the Himalayas and carved gorges in the mountains).

Length

- 1450 km.

Flows through

- Country- **Tibet(China), India, Pakistan**.
- Indian States- **Himachal Pradesh and Punjab.**
- Enters India through **Shipki La pass.**
- Sutlej River meets the **Beas River in Harike** in the **Ferozpur district** before entering Pakistan.

The basin

- Located to the north of the **Vindhya Range**, east of the **Pakistani Central Makran Range** and south of the **Hindu Kush region.**

Major tributaries

- Left: **Baspa.**
- Right: **Spiti, Beas, Chenab.**
- Other: **Nogli Khad and Soan River.**

Projects and canals

- **Bhakra Nangal Hydel project, Koldam dam, Nathpa Jhakri Dam, Satluj Yamuna Link Canal, Indira Gandhi Canal, Luhri Stage-I Hydro Electric Project**.

Wetlands and National Parks

- **Harike Wetland, Ropar wetland, Harike Bird Sanctuary, Gobing Sagar Lake, Rupi Bhaba Wildlife Sanctuary, Shikari Devi Wildlife Sanctuary.**

Transportation

- **National Water Ways 98**, Punjab and Himachal Pradesh.

Threat to the River

- **Pollution**: Untreated sewage waste from Ludhiana city.
- **Small-scale industries** like units on electroplating, hosiery, steel rolling mills.

Leather Industry.

- Traces of **chromium and arsenic**.
- **Heavy metals and pesticides.**
- **Climate change** as Nearly 60% of the flow into comes from snow and glaciers.
- **Due to construction of several dams the River** has turned into a rivulet and changing the entire ecosystem and eco-chain.

Initiatives taken for conservation

- **River Rejuvenation**: Ministry of Environment, Forest, and Climate Change is focusing on the rejuvenation of 13 major rivers through **forestry interventions including Sutlej River**.

Threat from the River

- Flooding: 1988 and 2023 Punjab flood.

Historical Aspect

- **Battle of Aliwal** was fought between the **Sikh Khalsa army and the British forces** at Aliwal near the Sutlej River in Punjab on **28 January 1846**.

Recent Discovery

- Traces of a rare metal "**Tantalum**" were discovered in the Sutlej river.

Tizu Zungki River

Context

- Centre to explore Tizu Zunki river to connect hilly Nagaland with Southeast Asia for trade, touri

Details

Tizu River

Origin

- Central part of Nagaland

Length
- 203 km

Catchment Area
- 2760 sq.km

Flow Direction
- Northeast direction

Drain into
- **Chindwin River** at Htamanthi in Myanmar (Third largest Tributary of River Irrawaddy).

Tributaries
- Zungki, Lanye, and Likimro

National Water Ways
- National Waterway - **Tizu Zungki (NW-101)** (Longmatra to Avakhung stretch).
- Other NW: **National Waterway-30: Dhansiri/Chate River, National Waterway-31: Dikhu River, National Waterway-32: Doyang river**.

Additional Facts
- Other main Rivers: **Doyang, Dhansiri, Dhiku** flows towards west through Assam plains to join River Brahmaputra.
- Other NW of North East: **NW-2 (the Brahmaputra) and NW-16 (the Barak river).**

Zungki River

Origin
- Changdong forest

Length
- 80 km

Catchment Area
- 2060 sq.km

Flow Direction
- Southern

Drain into
- Tizu River

Davis Strait

Context
- New microcontinent being born between Canada and Greenland: A study into the published in Gondwana Research.

Introduction
- A strait is a landform connecting two seas or two water basins.

Extent
- On the North. The Southern **limit of Baffin Bay**.
- On the East. The **Southwest coast of Greenland**.
- On the South. The parallel of 60° North between **Greenland and Labrador.**
- On the West. The Eastern limit of the Northwestern Passages South of 70° North and of **Hudson Strait**.

Named after
- **John Davis,** who explored the area while seeking a Northwest Passage.

Connects
- **Labrador Sea (Atlantic Ocean) in the south with Baffin Bay to the north**.

Length and Width
- 400 miles (650 km) north to south.
- 200 to 400 miles wide.

Depth
- **One and two thousand meters**.

Geology
- Formed by strike-slip faulting of the **Ungava Fault Zone during Paleogene times** about **45 million to 62 million** years ago.
- It is the world's **broadest strait.**

Hydrography
- 600 m deep underwater **sea ridge**.
- Numerous **sea slopes** located along the **Labrador sea flank.**
- **Abyssal plain** with a water depth ranging from **20 m to 100 m.**

Coral colonies
- **Lophelia Pertusa reef** (Cold-water reefs).

Recent Findings
- Newly recognised **microcontinent exists** on a tectonic plate boundary between Canada and Greenland which has **formed the Davis Strait**.
- It has been named the Davis Strait **proto-microcontinent** since it formed owing to the tectonic evolution of the strait in the region.

Proto-microcontinents- related regions of relatively thick continental lithosphere separated from major continents by a zone of thinner continental lithosphere.

- The **microcontinent is 19–24 km thick** thinned continental crust and is surrounded by two narrow bands of thin **(15–17 km) continental crust**.

Mashco Piro tribe

Context

- The previously uncontacted Mashco Piro tribe emerged in Peru due to encroachment and a search for food and safety.

Details

Introduction

- Uncontacted tribes are Indigenous peoples who avoid all contact with outsiders. They're not backward and primitive relics of a remote past, they are our contemporaries and a vitally important part of humankind's diversity.

Inhabitants of

- Amazon jungles of the **Madre de Dios Region**, close to Peru's border with Brazil and Bolivia.

Population

- More than 750.

Livelihood

- **Nomadic hunter-gatherers.**

Relation with outsiders

- The tribe is very **reclusive.**
- Only occasionally contacting the native but contacted **Yine people for food** and machetes and cooking pots.
- (The Yine are an **indigenous people in Peru**. They live along the **Urubamba River**, the **Madre de Dios River).**

Language

- The **Yine language** is closely related to that of the **Mashco Piro**, and they can sometimes communicate when the **Mashco Piro emerge to seek food** and supplies.
- They mimicking the high, thin, trill of a **Tinamou bird** as warning.

Threat to them

- **Spread of a disease among the population** as uncontacted Mashco Piro have **no immunity to common diseases.**
- **Logging** on Indigenous territory.
- **Conflict** with **local villagers**.

Initiatives taken by government and locals to preserve them and avoid conflict.

- Created the **Madre de Dios Territorial Reserve** to protect the Mashco Piro's forest.
- Many Yine villagers defend the Mashco Piro. They plant an **extra garden** – a **"chacra"** – at the **edge of their village** where the uncontacted people can help themselves to food, then disappear back into the forest.

Uncontacted tribes are at imminent risk of destruction

- **Ayoreo, Paraguay**: Shrinking island of forest.
- **Hongana Manyawa, Indonesia**: Highly destructive mining.
- **Shompen, India:** "Mega-development" plan to transform their small island home into the "Hong Kong of India."
- **Kawahiva, Brazil:** Fighting for their survival.

Bhusanket Web Portal

Context

- Union Minister G Kishan Reddy inaugurates National Landslide Forecasting Centre and Launches Bhusanket Web Portal & Bhooskhalan Mobile App.

Details

Geological Survey of India (GSI)

Establishment and Initial goal

- 1851.
- To find **coal deposits** for the Railways.

Headquarter

- Kolkata

Regional Offices

- Lucknow, Jaipur, Nagpur, Hyderabad, Shillong
- State unit offices in almost all states of the country.

Ministry

- **Ministry of Mines**.

Evolution

- Status of a **geo-scientific organization.**

Main functions

- To creating and updating of national **geoscientific information** and **mineral resource assessment**.

Objectives are achieved through

- Ground surveys, air-borne and marine surveys.
- Mineral prospecting and investigations.
- Multi -disciplinary **Geoscientific, Geo-Technical, Geo-Environmental and natural hazards studies.**
- Glaciology , **Seismo-Tectonic Study** and carrying out fundamental research.
- Documentation of all geological processes both surface and subsurface, of the country and its offshore areas

Exploration of Critical Minerals

- Number of exploration programs for critical minerals has increased **from 127 in 2023 to 196 out of total number of 450 exploration** programmes in 2024.

Recent Developments

National Landslide Forecasting Centre (NLFC)

- It is a pioneering initiative aimed at landslide hazard mitigation in India.
- It will in due course issue early warning bulletins for all landslide-prone states, operationalizing the regional **Landslide Early Warning System (LEWS)** nationwide by 2030.
- It will provide early information to local administration and communities.
- It will update landslide inventories, and integrate real-time rainfall and slope instability data for enhanced forecasting accuracy.

Launch of the Web Portal and the App

- This web portal will facilitate the dissemination of relevant data and information on landslide hazards, initiating short-range and medium-range landslide forecasting in the country.
- Integrated with the Bhusanket Web Portal, the Bhooskhalan Mobile App will enable quick dissemination of daily landslide forecasts and allow stakeholders to share and update spatial and temporal information on landslide occurrences.

Liberia

Context

- In Liberia group of senators has submitted a proposal to the government to relocate it's capital city Monrovia.

Details

Location

- Western Africa.

Type of Government

- Presidential republic.

Capital

- Monrovia.

Border countries

- Guinea 590 km; Cote d'Ivoire 778 km; Sierra Leone 299 km.

Population

- Total: 5,437,249.

Coastline

- North Atlantic Ocean, 579 km.

Area

- 111,369 sq km.

Climate

- Tropical; hot, humid; dry winters with hot days and cool to cold nights; wet, cloudy summers with frequent heavy showers.

Terrain

- Mostly flat to rolling coastal plains rising to rolling plateau and low mountains in northeast.
- The coastline is characterized by lagoons, mangrove swamps, and river-deposited sandbars; the inland grassy plateau

Elevation

- Highest point: **Mount Wuteve 1,447 m**
- Lowest point: **Atlantic Ocean 0 m**

Natural resources

- Iron ore, timber, diamonds, gold, hydropower.

Land use

- Agricultural land: 28.1%, Forest: 44.6%.

Industries

- Mining (**iron ore and gold**), **rubber processing**, palm oil processing, diamonds.

Natural hazards

- Dust-laden **harmattan winds blow from the Sahara** (December to March).

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- **Flash floods** in urban areas.

Environment issues

- Tropical rain forest deforestation; soil erosion; loss of biodiversity; hunting of endangered species for **bushmeat.**
- Pollution of coastal waters from **oil residue and raw sewage**; burning and dumping of household waste

People and Society

- **Ethnic Group**: Kpelle 20.2%, **Language**: English 20% (official) and 27 indigenous languages. **Religion**: Christian 84.9%, Muslim 12%, Traditional 0.5%, other 0.1%, none 2.6%.
- **Urban population**: 53.6% of total population.

Transnational Issues

- Proximity to major drug transit routes contribute to **trafficking cocaine and heroin**, to and through Liberia

Recent Development

- A group of senators in Liberia, situated along the coast of western Africa, has proposed to relocate the country's capital **city Monrovia** due to recurring flash floods.

Reason behind this proposal

- **Rising sea levels and Coastal erosion :** In the West Point slum of Monrovia alone, sea level rise and coastal erosion displaced more than 6,500 people, and destroyed 800 houses between 2013 and 2018.
- **World Bank Report:** By 2030, the Greater Monrovia District is expected to witness a sea level rise of 16 cm. This would put nearly 675,000 people and 9,500 hectares of land at risk.
- Projections show that the frequency of intense rainfall **will spike in the country**, which will **contribute to flooding.**

Kosi-Mechi River linking

Context

- The long-awaited Kosi-Mechi river interlinking project in Bihar is closer to becoming a reality, with the Union Budget 2024-25 allocating a substantial Rs 11,500 crore.

Kosi River

Origin

- Confluence of three streams: The Sun Kosi, The Arun Kosi, and The Tamur Kosi.

Also known as

- **Saptakoshi** for its seven upper tributaries.

Flow

- **Trans-boundary river which flows through China, Nepal, and India**

Tributary of

- **Left bank**: Ganges, near Kursela in **Katihar district.**

Length

- **729 km**

River basin borders

- Tsangpo River basin in the north, Mahananda River basin in the east, Ganges Basin in the south and the Gandaki River basin in the west.

Drainage

- **74,500 sq.km**, only 11,070 sq.km lie within Indian Territory.

Tributaries

- Sun Koshi, Tama Koshi or Tamba Koshi, Dudh Koshi, Indravati, Likhu, Arun, and Tamore or Tamar.

Peaks located in the basin.

- Mount Everest, Kangchenjunga, Lhotse, Makalu, Cho Oyu and Shishapangma.

Projects

- Kosi Barrage or Bhimnagar Barrage.
- Kosi-Mechi Interlink.
- Sapta Koshi High Dam Multipurpose Project.
- Sun Koshi Storage-cum-Diversion Scheme.

Vulnerability

- Kosi is known as the **"sorrow of Bihar",** as it has caused widespread human suffering in the past due to flooding and very **frequent changes in course**.
- (During the last 200 years, the river has shifted westwards for a distance of about 112 km)

Mechi River

Origin

- Mahabharat Range in Nepal

Flow

- **Trans-boundary river flowing through Nepal and India**

Tributary of

- **Right Bank**: Mahananda River, join at **kishanganj district of Bihar.**

Length

- 80 km

River basin borders

- Part of **Mahananda River** basin.

Drainage

- Part of **Mahananda River** drainage which is 11,530 square kilometers.

Projects

- Kosi-Mechi Interlink

Death Valley

Context

- Ninety-seven runners started the world's toughest 48-hour foot race in Death Valley.

Details

Location

- Eastern **California, USA**

Also Known as

- **Land of extremes**: It is the lowest, hottest, and driest place of the North America.

Surrounded by

- **Mojave Desert** in south , bordering the **Great Basin Desert**.

Area

- 5,262 square miles.

National Park

- Declared a national park on October 31, **1994.**

Geological features

- Lowest point is -282 feet at **Badwater.**
- The highest point in Death Valley is 11,049 feet on **Telescope Peak.**
- Formed by a series of fault systems, including the well-known Death **Valley Faults.**
- Known for its expansive salt flats, such as those found in **Badwater Basin**.
- Colorful rock formations, canyons, **alluvial fans, and volcanic features.**
- Playas are dry lakebeds that form in the valley, such as **Racetrack Playa**.
- **Ubehebe Crater** is a large volcanic crater located in the northern part of Death Valley.
- **Zabriskie Point**, is a **badland topography**.
- Home to **Golden Canyon and Mosaic Canyon.**

Climate

- Experiences an extremely hot and arid climate, with **minimal rainfall and high temperatures** during the summer months.

Wildlife

- **Endemic Animal**: Devil's Hole Pupfish, Cottonball Marsh Pupfish, Saratoga Spring, Pupfish, Salt Creek Pupfish.
- **Plants:** Shining Milkvetch, Napkin Ring Buckwheat , Panamint Mountains Bedstraw.

Asian Disaster Preparedness Centre (ADPC)

Context

- India assumes the Chair of Asian Disaster Preparedness Centre (ADPC).

Details

Establishment:

- 1986

Status

- A regional disaster preparedness center (DMC) .

- **Non-profit, autonomous, regional organization, international in status, and non-political in management, staffing and operations.**

Vision

- "**Safer communities and sustainable development through disaster risk reduction**".

Headquarter

- **Bangkok,** Thailand.

Geographical remit

- Asia and the Pacific.

Founding Members and the Charter

- **India** and eight neighboring countries: **Bangladesh, Cambodia, China, Nepal, Pakistan, Philippines, Sri Lanka, and Thailand.**
- The Charter was put into effect in 2018 through the ratification by all the founding members.

Chairmanship

- **India's** National Disaster Management Authority took over the Chair of ADPC **from China** for the year **2024-25.**

Functions

- It provides an excellent mechanism to address existing and the **emerging negative impacts of natural hazard and climate change**.
- Support global initiatives on **climate resilience, urban resilience,** making humanitarian response to disasters more effectively.
- Give support and direction for recovery and **rehabilitation, building back better.**

Organs

- **Board of Trustees, the Executive Committee, Advisory Council and the Regional Consultative Committee (RCC).**

Program

- **SERVIR SEA** is a geospatial data-for-development program that responds to the needs of Southeast Asian countries.
- The program builds on the successes of SERVIR-Mekong, **implemented by ADPC.**

9.2 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topics	Date	Topics	Date
Aphelion	6th July 2024	Groynes	8th July 2024
La Niña.		Notified Disaster	30th July 2024
Geological link between India and Antarctica	17th July 2024	Rawanda	
Critical minerals of India	15th July 2024	Lithium Deposits in India	30th July 2024
World Population Prospects 2024	16th July 2024	Global Uranium Deposits	30th July 2024
UN Water convention		Santorini	27th July 2024
Mount Etna and Stromboli		Dark Oxygen	
Deep-drilling mission	12th July 2024	Magnetofossil	26th July 2024
Indian National Centre for Ocean Information Services (INCOIS)	12th July 2024	Ram Setu	
Denisovans	12th July 2024	Typhoon Gaemi	25th July 2024
Climate change and Hurricane Beryl	11th July 2024	India to scout pacific ocean for critical minerals	25th July 2024
Earth's core	9th July 2024	Second Thomas Shoal	24th July 2024
		Rogue Waves	23rd July 2024