VISION IAS
INSPIRING INNOVATION

PT 365

UPDATED CLASSROOM STUDY MATERIAL-2

(February 2025 to 15th April 2025)

PT 365 UPDATED PART 2

Table of Contents

PT 365 - Updated Classroom Study Material

PT 365 - Updated Classroom Study Material

You can scan this QR code to practice the smart quiz at our open test online platform for testing your understanding and recalling of the concepts.

SMART QUIZ

Dear Students,

PT 365 document comprehensively covers the important current affairs of last 1 year (365 days) in a consolidated manner to aid Prelims preparation.

In our endeavour to further enhance the document in the interest of the aspirants, following additions have been incorporated:

Consolidated Maps: They have been added to provide geographical and contextual information about different places in news. These include-

- **Individual maps for each Country or Place** mentioned in the news
- **Comprehensive Continent-wise maps** for quick reference
- **Maps depicting Multilateral Groupings**
- **Maps indicating bilateral military exercises**

Summarised Infographics: Indicating important facts to improve ease of understanding, provide for smoother learning experience and ensure enhanced retention of the content.

Institutions/Organizations in News: Important information about major Institutions and Organizations which have been recurringly in news has been provided.

Quiz: QR based Smart quiz has been added to test the aspirant's learnings and understanding.

PT 365 - Updated Classroom Study Material

1. POLITY AND GOVERNANCE

1.1. ASSENT TO BILLS PRESENTED BY STATE LEGISLATURE TO GOVERNOR

Why in the News?

Supreme Court addressed **Governor's and President powers concerning assent or withholding of assent** to bills presented by State legislature under Article 200 and Article 201 of the Constitution.

Assent to Bills under Article 200

- **Governor's Options**: Upon presentation of a Bill, the Governor shall either:
  - Grant assent
  - Withhold assent
  - Reserve the Bill for the President's consideration
- **Return for Reconsideration**: The Governor may return a non-Money Bill for reconsideration with recommendations for amendments.
  - If Bill is re-passed by the legislature, with or without modifications, the Governor is obligated to grant assent to it.
- **Reservation for President**: Governor may reserve a Bill if it threatens the powers of the High Court.

ARTICLE 201: PRESIDENTIAL ASSENT TO STATE BILL

Constitutional Provision	Issue with Article 201	Commission Recommendations
President can Leither **assent to the Bill** or **withhold assent** Or direct the governor to return the bill for reconsideration	**No time limit** for the President to act – Bills can be **indefinitely retained**	Sarkaria Commission (1983) & Punchhi Commission (2007) Both recommended a prescribed timeline for presidential decision

The timeline would prevent indefinite retention of state bills

Key Takeaways from 'State of Tamil Nadu vs Governor of Tamil Nadu' case

Under article 200 of the Constitution

- **Supreme Court ruled, Constitution does not allow Governor to exercise "absolute veto" or "pocket veto":** The term "as soon as possible" in Article 200 underscores urgency in the Governor's decision-making.
  - **Absolute Veto:** Withholding assent to bill passed by legislature.
  - **Pocket Veto**: Governor takes no action on a bill and keeps it pending indefinitely.
- **Governor Cannot Send Bill to President Once Re-presented**: If the bill is unchanged, Governor must assent to it, unless the bill differs in content from original one.
- **Governor Must Act on Aid and Advice of State Government**: Court ruled, Governor has no discretion & must act as per Council of Ministers' advice.
  - **Only exception**: Bills affecting powers of High Court or Supreme Court (Art. 200).
- **Court established clear timelines (see image) for Governor's actions** under Article 200 to ensure expediency.
  - Failure to comply with these timelines would make the Governor's inaction subject to judicial review.

Supreme Court Timelines for Governor's Actions on Bills under Article 200

One month: Withholding assent or reservation of the Bill for consideration of the President

Three months: Reservation of Bills for consideration of the President, contrary to advice of the State Council of Ministers.

Three months: Withholding assent contrary to the advice of the State's Council of Ministers. The Governor must return the Bill together with a message.

One Month: Bills re-enacted by the Assembly after they were sent back by the Governor, must be assented by the Governor in the second round within one month

Under article 201 of the Constitution

SC has set **timeline for the President** to act on the Bills which **Governor has reserved for the President's assent.**

- **Time Limit for Decision**: President must decide within 3 months on Bills reserved for him.
  o President has to **declare reasons** for withholding of assent, which must be communicated to State Government.
- **States are required co-operate**: By answering queries and consider suggestions made by Central government.
- **Issuance of writ of mandamus**: If there is no action by President within the time-limit, the States are entitled to file writ petitions against President.
- **No absolute veto for President:** President cannot exercise "absolute veto" by indefinitely sitting over Bills.
- **Pre-Legislation Consultation:** States must consult Central government before introducing bills requiring Presidential assent. Central government should consider state proposals with due regard and expediency.
- **Article 143:** President ought to seek Court's advice if Bill is reserved on the ground of unconstitutionality.

1.2. WAQF (AMENDMENT) ACT, 2025

Why in the News?

The Act of Parliament received the assent of the President.

What is 'Waqf'?

Refers to **properties dedicated exclusively for religious or charitable purposes** under **Islamic law,** and any **other use or sale of the property is prohibited.**

Waqf properties are **bestowed upon Allah** and are **managed and administered by an** appointed 'mutawalli'.

WAQF BOARD

Waqf Boards currently control **8.7 lakh properties** spanning **9.4 lakh** acres across India. India has the **largest waqf holding in the World.**

Key changes provisions include:

- **Formation of waqf:** No person shall create a waqf unless he is the lawful owner of the property and competent to transfer or dedicate such property.
- **Survey of waqf:** The Act replaces the Survey Commissioner with the District Collector.
- **Government property as waqf:** The Act states that any government property identified as waqf will cease to be.
- **Composition of the Central Waqf Council:** Union Minister in-charge of waqf is the ex-officio chairperson of the Council. Members of the Council include Members of Parliament, persons of national eminence, retired Supreme Court or High Court judges, and eminent scholars in Muslim law.
  - The Act requires that all Council members, barring the Minister, must be Muslims, and at least two must be women.
  - It mandates that two members must be non-Muslims.
- **Composition of Waqf Boards:** The Act provides for election of up to two members each from electoral colleges of a state's Muslim: (i) MPs, (ii) MLAs and MLCs, and (iii) Bar Council members, to the Board.
  - It adds that the Board must have:
    - Two non-Muslim members,
    - At least one member each from Shias, Sunnis, and Backward classes of Muslims.
    - One member each from Bohra and Aghakhani communities shall be nominated in the Board in case they have functional auqaf in the State or Union territory.
  - The Act provides that at least two members must be women.
- **Composition of Tribunals**: Tribunals constituted under the Act comprise of:
  - A Judge of the rank equivalent to a Class-1, District, Sessions, or Civil Judge (Chairman),
  - A state officer equal to the rank of Joint Secretary to the State Government, and
  - An expert in Muslim law.
- **Appeals against orders of Tribunals:** Any person aggrieved by the order of the Tribunal, may appeal to the High Court within a period of ninety days from the date of receipt of the order of the Tribunal.
  - if there is no Tribunal or the Tribunal is not functioning, any aggrieved person may appeal to the High Court directly

1.3. JUDICIAL ACCOUNTABILITY

Why in the News?

Chief Justice of India constituted a three-member committee of senior judges to conduct an inquiry into the allegations that a "huge" amount of cash was found at the official residence of senior Delhi High Court Judge

About Judiciary's In-House Enquiry Procedure

- **In-House Mechanism of 1999:** Based on two important charters governing judicial ethics— **the Restatement of Values of Judicial Life 1997 and the Bangalore Principles of Judicial Conduct 2002**.
  - The CJI **can receive complaints** against the conduct of the Judges of the Supreme Court and the Chief Justice of the High Courts. High Court Chief Justices can handle complaints within their courts.
  - A **three-member committee** examines the complaint and may recommend removal or criminal action.
    - **In case of complaint against a HC judge,** committee consists of **two Chief Justices of HCs other than the HC to which judge belongs and one HC judge.**
    - In case of complaint against a **HC Chief Justice**, committee consists of a SC judge and two Chief Justices of other HCs.
    - In case of complaint against **a SC judge**, committee consists of **three SC judges.**

Constitutional Provisions regarding Removal of Judges

Article 124(4): Provides for impeachment of a judge of a supreme court.
⊕ **Article 217** says the same provisions shall apply to a judge of the High Court as well.

Grounds: Proven misbehaviour and incapacity (Not defined in the Constitution).

Procedure is regulated by **Judges Enquiry Act (1968).**

1.4. DEVOLUTION TO PANCHAYATS

Why in the news?

Recently, Ministry of Panchayati Raj has released a report titled "Status of Devolution to Panchayats in States – An Indicative Evidence Based Ranking".

Devolution to Panchayats in States report

- **Key Highlights of Report**
  - **Panchayat Devolution Index**: Ranks States/ UTs along **6-dimensions of devolution**. (Refer Image)
    - The 'function' dimension, which is the base of local self-governments, has the lowest national average among all 6 dimensions.
  - **Top 3 States in devolution** are Karnataka, Kerala, and Tamil Nadu.
  - **Lowest 3 states/UTs** are Dadra & Nagar Haveli and Daman & Diu, Puducherry, and Ladakh.
  - **Devolution has increased** from 39.9% to 43.9% during 2013-14 to 2021-22.
  - **Capacity Enhancement** component of index **increased** from 44% to 54.6% due to initiatives like Rashtriya Gram Swaraj Abhiyan (RGSA).

Parameters of Panchayat Devolution Index

Framework	Function	Finances	Functionaries	Capacity Building	Accountability
Whether the Constitutional provisions are adhered to by states	Measures how panchayats fulfilled civic responsibilities like; sanitation, waste management etc.	Measures efficiency in devolution of funds to panchayats and sources of their funding.	Assess strength and performance of panchayat officials and infrastructure available to them	How the knowledge and skills of panchayat officials were being expanded to fulfil and take on more responsibilities.	The framework in place to audit and monitor the functioning of panchayats

1.4.1. PANCHAYAT ADVANCEMENT INDEX

Ministry of Panchayati Raj introduces Panchayat Advancement Index to assess gram panchayat performance based upon around 2.16 lakh gram panchayats assessment from 29 States.

About Panchayat Advancement Index (PAI)

- **Concept:** PAI is a multi-domain and multi-sectoral index that is intended to be used to assess the overall holistic development, performance & progress of panchayats.

- **Aims**: Measure how well these grassroots institutions are achieving localized Sustainable Development Goals (SDGs).
- **Themes**: The index evaluates panchayats based on nine key themes related to local development (See image).

Panchayat Development Themes

Theme 1
Poverty Free and Enhanced Livelihoods Panchayat

Theme 2
Healthy Panchayat

Theme 3
Child Friendly Panchayat

Theme 4
Water Sufficient Panchayat

Theme 5
Clean and Green Panchayat

Theme 6
Self-sufficient Infrastructure in Panchayat

Theme 7
Socially Just and Socially Secured Panchayat

Theme 8
Panchayat with Good Governance

Theme 9
Women Friendly Panchayat

- **Categories in the PAI**
  - **Achiever (0%):** No panchayat in India achieved the 'achiever' rank in this year's assessment.
  - **Aspirant (61.2%):** The largest percentage of panchayats falls under this category.
  - **Performer (36%):** A significant portion of panchayats has achieved moderate progress.
  - **Front-Runner**: Gujarat topped the rankings with the highest number of panchayats in this category

1.5. AADHAAR

Why in the News?

Ministry of electronics and IT (Meity) notified **Aadhaar Authentication for Good Governance (Social Welfare, Innovation, Knowledge) Amendment Rules, 2025**, amending the 2020 rules.

Amendments to the 2020 Rules

- These Rules have been notified under **the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016.**
- The amendment enables both **government and non-government entities** to avail **Aadhaar authentication service** for providing various **services in the public interest.**
  - The amendment extends to services in sectors **like e-commerce, travel, tourism, hospitality, and healthcare.**
- **Unique Identification Authority of India (UIDAI)** examines applications, and **MeitY grants approval based on recommendations.**
  - The concerned **ministry or department notifies** the entity after **MeitY confirmation.**

About Aadhaar Good Governance Portal

- **Ministry of Electronics and Information Technology (MeitY)** launched the Aadhaar Good Governance portal.
- **Objective**: Streamline approval process for Aadhaar authentication requests.

- o It will help in integrating **Face Authentication** in the customer facing apps of private entities, which will enable anytime anywhere, authentication.
- This platform comes into effect after 2025 rules.

About New mAadhar App

It is developed by the Unique Identification Authority of India (UIDAI), and aims to simplify identity verification processes, making them as seamless as UPI payments.

Key Features of the New mAadhaar App

QR Code-Based Instant Verification: Users can scan QR codes at "points of authentication" similar to UPI payments.

Face Authentication: Ensures real-time, secure, face-based verification.

Secure Data Sharing: Shares Aadhaar info directly from the user's device, protecting privacy.

User-Controlled Access: Data is shared only with user consent and limited to what's necessary.

To know more about Aadhaar, refer to Article 8.2 Aadhaar in PT 365 Polity and Governance.

1.6. OTHER IMPORTANT NEWS

1.6.1. DISQUALIFICATION OF MP

A jailed MP petitioned the Punjab and Haryana High Court for permission to attend Parliament as his prolonged absence could result in his seat being declared vacant.

Provisions of Disqualification

Under Article 101(4)

- If for **sixty days** a member of either House of Parliament is **without permission of the House absent** from all meetings thereof, the House may declare his seat vacant.
  - o The 60 days, however, do not account for "any period during which the House is **prorogued or is adjourned for more than four consecutive days".**

Under Representation of People Act, 1951

- A person **convicted of any offence and sentenced to imprisonment for not less than two years** other than any offence referred to in sub-section (1) or sub-section (2) shall be disqualified from the date of such conviction and shall continue to be disqualified for a further period of six years since his release.

Judicial Pronouncements related to Disqualification of MPs

Association for Democratic Reforms (ADR) case (2002): Mandates **disclosure of criminal records** of all **candidates** contesting elections.

Lily Thomas case (2013): A **sitting legislator is disqualified immediately** after conviction.

Public Interest Foundation v. Union of India (2019): Political parties publish the **criminal record** of their candidates on their websites, social media and local newspapers.

PT 365 - Updated Classroom Study Material

1.6.2. ONLINE ASSURANCES MONITORING SYSTEM (OAMS)

Union Parliamentary Affairs Minister highlighted the role of **OAMS** in managing Government Assurances.

About OAMS

- **Implemented** by the **Ministry of Parliamentary Affairs (MoPA)**, it is a **digital platform** for ensuring that **assurances made by Ministers in Parliament** are systematically **tracked, monitored, and fulfilled.**
  - **Assurances** (in the form of promises, undertakings, etc.,) are given during the course of answers to Questions or debates, by **Ministers on the floor of the House.**
  - Given due to **non-availability of information** at that time and are to be fulfilled within a **period of three months.**
  - **MoPA** is assigned the function of **implementation of assurances under Government of India (Allocation of Business) Rules, 1961.**

1.6.3. PRESIDENT'S RULE

President of India issued Proclamation imposing President's rule in Manipur.

About President's Rule

- **Constitution: Article 356,** provides for the imposition of **President's Rule in the State** if the President, based on the **report from the State Governor,** is satisfied that the government of the State cannot be carried in accordance with the **Constitutional provisions.**
  - Additionally, **Article 365 provides that if a State fails** to comply with any Union directions under constitutional provisions, the President may declare a Constitutional Emergency.
- **Duration and Approval:** As per **Article 356 (3),** it shall cease to operate at the expiration of **two months** unless approved by both the Houses of Parliament by **simple majority.**
  - If approved, can be extended to **six months** with the maximum extensions of **3 years** (parliamentary approval every 6 months).
- **Revocation:** By the President by a subsequent proclamation.

Judicial Pronouncement Related to President Rule

S R Bommai Vs Union of India (1994): Supreme Court held that the proclamation under **Article 356** was subject to **judicial review.**
- The President can **only dissolve a state legislative assembly** after Parliament's approval of the proclamation, and **until then, the assembly remains suspended.**

1.6.4. IMMIGRATION AND FOREIGNERS ACT, 2025

The Act seeks to **streamline various services** related to **immigration** and **foreigners**, including their entry, exit and stay in the country.

- This Act repeals four existing laws **Foreigners Act, 1946, Passport (Entry into India) Act** (1920), **Registration of Foreigners Act** (1939), and **Immigration (Carriers' Liability) Act (2000)** which governs the services related to immigration and foreigners.

Existing Governance Related Immigration and Foreigners

- **Registration of Foreigners**: Foreigners (including **Indian origin**) visiting India on the following **long-term visas** (more than **180 days**) must register with the **Foreigners Regional Registration Officer.**
- **Visa regulations: Bureau of Immigration (BoI)** grants electronic visas to countries.

- o The BoI was set up in 1971 under the **Ministry of Home affairs**.
- **Immigration (Carriers' Liability) Act, 2000**: Makes carriers responsible for passengers violating the **Passport Act**.
- **Citizenship Act, 1955**: Regulates acquisition and registration of foreigners as **Overseas Citizens of India (OCI)**.

1.6.5. AD-HOC JUDGES

Supreme Court has relaxed a condition pertaining to **appointment of ad-hoc judges to High Courts**.

- Now, High Court can appoint around 2-5 ad-hoc judges, provided the **number does not exceed 10% of the sanctioned strength of the concerned High Court.**
- Ad hoc judges can be appointed to State High Courts only if their judicial vacancies crossed 20% of the sanctioned strength.

About Ad-hoc Judge

- **Constitutional provisions:** According to **Article 224A of the Constitution**, the Chief Justice of a High Court may, with the previous consent of the President, request a retired judge of any High Court to serve as a judge of his court.
- **Procedure for Appointment**: As mentioned in the Memorandum of Procedure (MOP), 1998.
- **Supreme Court**: **Article 127 of the Constitution** provides for the appointment of ad hoc judges in case there is no quorum in the Supreme Court.

1.6.6. REMISSION

In the **Re Policy Strategy for Grant of Bail** case, the SC issued directions regarding the power of appropriate Government to remit the whole/a part of sentence of convicts.

- **Section 432 of the CrPC** & **Section 473** of BNSS (**Bharatiya Nagarik Suraksha Sanhita**) deal with the **remission powers of the appropriate government**.

Key Directions:

- **Obligation to Consider Eligible Convicts:** States/UT which has a remission policy is obliged to consider eligible cases for remission even without the convict applying for it.
  - o States/UTs without a remission policy are directed to formulate within 2 months.
- **Conditions for Remission**: Must be reasonable, specific, & feasible, considering nature of crime & public safety.
- **Revocation of Remission:** Requires recorded reasons for such decisions & an opportunity for convict to respond.

About Remission

- **Definition:** Remission refers to the **reduction or mitigation of a sentence** imposed on a person convicted of a crime without changing nature of the sentence.

Constitutional Provisions related to Remission

Article 72
of **Indian constitution** grants the President the power to grant p**ardons, reprieves, respites, or remissions** of punishment, & to suspend or commute sentences.
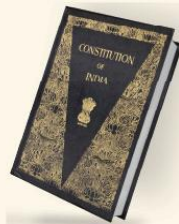
Article 161
provides similar powers to the **Governor** for offenses under state laws.

PT 365 - Updated Classroom Study Material

1.6.7. DOCTRINE OF PITH AND SUBSTANCE

Recently, SC dismissed **centre's plea to levy service tax** on promotion, marketing, or sale of lottery tickets.

- The power to levy tax on lotteries (Considered **games of chance** and fall under **"betting and gambling" in List II of Seventh Schedule (Article 246)**) lies exclusively with state Legislature.

About Doctrine of Pith and Substance:

- It determines **which level of government (union or state) is empowered to make a law**, in case of ambiguity in legislative powers.
- It says that when there is a question of determining whether a particular law relates to a particular subject **court looks to the substance of the matter.**

1.6.8. DIGITAL BRAND IDENTITY MANUAL (DBIM)

Ministry of Electronics and Information Technology (MeitY) introduced DBIM.

About DBIM

- The initiative **focuses on simplifying and standardizing government websites.**
- **Aim:** To ensure that citizens from **diverse backgrounds** can easily **navigate** and **access essential government services**.
- **Objective:** To enhance service delivery, and ensure consistent messaging across ministries, making government priorities more transparent.

1.6.9. HAGUE SERVICE CONVENTION

The U.S. SEC has requested assistance from **the Indian government** under **the Hague Service Convention** to serve **summons** in a securities and wire fraud case.

Hague Service Convention

Genesis: 1965.

Nature: It is an international treaty that streamlines the process of serving legal documents across international borders.

Signatories: 84 countries.
➤ **India joined in 2006 with reservations.**
➤ **It prohibits the service of judicial documents through diplomatic or consular channels,** except when the recipient is a national of the requesting country.

Central authority to handle service requests: The Ministry of Law and Justice.

1.6.10. COPENHAGEN FRAMEWORK ON CITIZEN DATA

Ministry of Statistics and Programme Implementation exploring relevance of Copenhagen Framework on Citizen Data and its integration with India's statistical system.

About the Framework

- **Genesis:** Developed by **UN Statistics Division (UNSD) in 2023.**
- **Key provisions:**
  - Defines the **possible types of citizen data** and offers a common **understanding of relevant concepts and their definitions** as a solid foundation for citizen data.

- o Provides a scope that helps **conceptualize and agree on the different ways citizens can play a role in data**.

1.6.11. CORRUPTION PERCEPTIONS INDEX (CPI) 2024

CPI **ranks 180 countries and territories** by their perceived levels of **public sector corruption** on a scale of zero (highly corrupt) to 100 (very clean).

About CPI

- CPI 2024 highlights that **corruption is making fight against climate change much harder** and urged international community to **address the link between corruption and the climate crisis**.
- Transparency International releases this.

Key highlights of Report

- **85% of world population** lives in countries with CPI scores under 50.
- **India:** India scored 38 out of 100 (drop of one point from 2023) and ranked 96th.
- **Least corrupt**: Denmark followed by Finland and Singapore.
- **Most Corrupt**: South Sudan, Somalia, and Venezuela.

1.7. ERRATA

PT 365 Polity and Governance (April 2024 to October 2024)

- In article '8.10 Diplomatic Passport', it was incorrectly mentioned that there are three classes of passports issued in India: Ordinary (blue colour), Diplomatic (white colour) and Official (maroon colour).
- The correct information is:
  - o There are mainly three classes of passports issued in India: Ordinary (blue colour), Diplomatic (maroon colour) and Official (white colour).

PT 365 - Updated Classroom Study Material

2. INTERNATIONAL RELATIONS

2.1. MULTILATERAL ORGANISATIONS

2.1.1. INDIAN OCEAN RIM ASSOCIATION (IORA)

Why in the News?

India will assume the chair of IORA in 2025 for the next two years.

Quick Overview of IORA

Genesis: An **inter-governmental organization** established in 1997 with its vision originating during a visit by Nelson Mandela to India in 1995.

Objective: Encourage **regional cooperation and sustainable development within the Indian Ocean region.**

Secretariat: Mauritius

Members: 23 Members and 12 dialogue partners.

- **Other Key Facts on IORA**
  - **IORA Governance:**
    - **IORA Council of Ministers:** Highest decision-making body comprising the **Minister of Foreign Affairs (or equivalent) of all Member States** which meets annually.
  - **Flagship Projects:**
    - **Indian Ocean Dialogue (IOD):** A **Track 1.5 forum** launched in **2013,** encouraging open dialogue among member states, on key strategic issues in the Indian Ocean Region.
    - **IORA Sustainable Development Program (ISDP):** Introduced in 2014 for the least developed countries (LDCs) that require assistance and support to conduct projects.

Member States of IORA

Russia*
The United Arab Emirates
Germany*
The United Kingdom*
France
The United States*
Italy*
Turkey*
Egypt*
Iran
China*
Japan*
South Korea*
India
Bangladesh
Thailand
Oman
Yemen
Somalia
Sri Lanka
Malaysia
Saudi Arabia*
Kenya
Tanzania
Singapore
Indonesia
Mozambique
Madagascar
Australia
The Comoros
South Africa

Dialogue Partners (*)
European Union is also a Dialogue Partner

PT 365 - Updated Classroom Study Material

2.1.2. OTHER IMPORTANT ORGANIZATIONS IN NEWS

2.1.2.1. OTTAWA CONVENTION

North Atlantic Treaty Organization (NATO) members **Poland, Lithuania, Latvia** and **Estonia** plan to withdraw from the **Ottawa convention** owing to military threat from **Russia.**

About Ottawa Convention

Official Name: Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction.

Genesis: Adopted at Oslo (1997), signed at Ottawa, opened for signature from 1997-1999, enforced in 1999.

Objective: Puts obligations on State parties to not use, develop, stockpile anti-personnel mines under any circumstances.
➤ Further obligates them to destroy such mines.

Signatories: 133, India not a signatory.

Depositary: Secretary-General of the United Nations.

2.1.2.2. ECONOMIC COMMUNITY OF WEST AFRICAN STATES (ECOWAS)

Three countries **(Mali, Burkina Faso and Niger)** under military rule have officially left **West African regional bloc, ECOWAS,** following diplomatic tensions.

HQ: Abuja, Nigeria

Quick Overview of ECOWAS

Genesis: 1975

Aim: Promote **economic cooperation** among member states in order to raise living standards and promote economic development.

Members: 12 (after the current withdrawal): Benin, Cabo Verde, Cote d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Nigeria, Senegal, Sierra Leone, and Togo.

2.1.2.3. ORGANIZATION OF ISLAMIC COOPERATION

The OIC endorsed the Arab League's alternate proposal against US President's plan to seize Gaza and displace its residents.

Quick Overview of OIC

Membership: It is the **second largest organization** after United Nations with **57 states** spread over 4 continents.

Genesis: 1969

Permanent Secretariat: Jeddah

Objective: To safeguard and **protect interests of the Muslim world** in the spirit of promoting **international peace and harmony** among various people of world.

2.1.2.4. INTERNATIONAL ORGANIZATION OF AIDS TO MARINE NAVIGATION (IALA)

India is elected to the **Vice Presidency** of IALA in Singapore, strengthening its commitment to maritime safety, navigation, and international cooperation.

HQ: Saint-Germain-en-Laye, France

Quick Overview of IALA

- **Establishment: 1957** as a Non-Governmental Organization (NGO).
- **Transition to IGO**: In 2024, IALA transitioned from an NGO to an **Intergovernmental Organization (IGO).**
- **Aim**: Urges members to cooperate to standardize Marine **Aids to Navigation globally, ensuring safe, efficient, and environmentally friendly vessel movement.**

2.2. BILATERAL RELATIONS

2.2.1. INDUS WATER TREATY

Why in the News?

Government of India has suspended the Indus Water Treaty (IWT).

More On the News

- In the wake of the Pahalgam terror attack, **the Cabinet Committee on Security** of the Government of India has decided to suspend the Indus Water Treaty with immediate effect.

About the Indus Water Treaty:

Genesis:

- Signed in 1960 between Indian Prime Minister Pt. Jawaharlal Nehru and Pakistani President Mohammad Ayub Khan.
- Brokered by the World Bank.

Key Provisions:

- **Water Right Usage:**
  - **Eastern Rivers (Ravi, Beas, and Sutlej):** Allocated for India's unrestricted use.
  - **Western Rivers (Indus, Jhelum, and Chenab):** Allocated to Pakistan, with India allowed specific non-consumptive uses such as: Navigation, Floating of timber or other property, Flood protection or control, Fishing or fish culture.
- **Exchange of Data:** Both parties are required to transmit monthly data on the flow and utilization of water.
- **Implementation Mechanism:**
  - **Permanent Indus Commission:** A commissioner from each country maintains a communication channel to resolve implementation issues.
  - **Settlement of Differences & Disputes:** A three-level graded mechanism for resolving disputes:
    - > Permanent Indus Commission
    - > Neutral Expert
    - > Court of Arbitration
- **Modification:** The provisions of the treaty may be modified by a duly ratified treaty concluded by both governments.

Related News

Pakistan Announces Suspension of the Simla Agreement After India Halts the Indus Waters Treaty

- The Simla Agreement, signed in 1972 between India and Pakistan, was a pivotal peace measure following the India-Pakistan War of 1971.
- This agreement aimed to resolve bilateral issues and normalize relations, after the creation of Bangladesh from East Pakistan.

Key Highlights of the Simla Agreement:

- **Bilateral Resolution of Disputes:** Both countries agreed to resolve all outstanding issues through direct negotiations, without any third-party mediation.
  - They also committed to respecting each other's sovereignty and territorial integrity, as outlined in the United Nations Charter.
- **Line of Control (LoC):** The ceasefire line from 17th December 1971 in Jammu and Kashmir was transformed into the Line of Control (LoC), demarcating the boundary between Indian-administered and Pakistan-administered Kashmir.
- **Normalization of Relations:** The agreement outlined steps to resume communication, open border posts, promote travel, trade, and economic cooperation, and encourage exchanges in science and culture.

Important Outcomes of the Agreement:

- **Pakistan's Recognition of Bangladesh:** One of the major outcomes of the agreement was Pakistan's diplomatic recognition of Bangladesh.
- **Land Return:** India returned over 13,000 km^2 of land seized during the war, with the exception of some strategic areas in the Chorbat Valley (approximately 883 km^2), part of the Shyok River Valley in Ladakh.

2.2.2. INDIA-U.S.A.

Why in the News?

The Indian Prime Minister paid an Official Working Visit to the USA.

Key Outcomes of the Visit

- **Defense & Security**
  - **U.S.-India Major Defense Partnership**: Announced a ten-year framework to advance defense cooperation.
  - **Autonomous Systems Industry Alliance (ASIA)**: Aimed at scaling industry partnerships and production in the Indo-Pacific.
  - **Co-production Agreements**: New arrangements for manufacturing Javelin (Anti-Tank Guided Missiles) and Stryker (Infantry Combat Vehicles) in India.
- **Technology & Innovation**
  - **U.S.-India TRUST Initiative**: Aimed at catalyzing government-to-government, academia, and private sector collaboration on emerging technologies, particularly in defense.
  - **INDUS Innovation**: Focuses on advancing U.S.-India partnerships in space, energy, and other technologies.
  - **Strategic Mineral Recovery Initiative**: A program to recover critical minerals (e.g., lithium, cobalt, rare earths) from industries like aluminum and coal mining.
- **Other Initiatives**
  - **COMPACT for the 21st Century**: A framework to promote military partnerships, commerce, and technology collaboration.
  - **Indian Ocean Strategic Venture**: A bilateral forum for coordinated investments in economic connectivity.
  - **Mission 500**: Aimed at doubling U.S.-India bilateral trade to $500 billion by 2030.

    o **Co-development of Wave Glider**: An MoU for creating Autonomous Surface Vessels (ASVs) for Anti-Submarine Warfare.

Note: Please refer to the PT365 International Relations for India-US Relations.

Related News

- Recently, the United States (U.S.) has removed **three Indian nuclear entities from its Entity List**.
  - o **The U.S. Entity List restricts** trade with **foreign entities** deemed a national security risk.
- **The three entities are:** Bhabha Atomic Research Centre (BARC), Indira Gandhi Atomic Research Centre (IGCAR) and the Indian Rare Earths (IRE).

2.2.3. INDIA-FRANCE

Why in the News?

India and France co-chaired the Artificial Intelligence (AI) Action Summit held in France.

More on the News:

- The AI Action Summit has been organized by France in Paris with UNESCO as a key participant.

India-France Relations: Key Facts

- **Strategic Partnerships**: France initiated India's first Strategic Partnership.
- **Key Defence Partner**: Major supplier with joint projects like Scorpene submarines, Rafale aircraft, etc.
  - o **The Cabinet Committee on Security (CCS)** approved the deal for Rafale M fighter jets.
  - o **FRIND-X (France-India Defence Startup Excellence)** launched for collaboration in defence innovation.
- **Key exercises:** SHAKTI (Army), GARUDA (Air), TARANG SHAKTI (Multinational Air), VARUNA (Naval).
- **Space:** Supplies components for India's space program, including Gaganyaan. Ongoing projects include joint **satellite TRISHNA.**
- **Civil Nuclear**: Collaboration since 2008, including Jaitapur plant. India in **ITER fusion project in France.**
- **Other Areas**: Joint climate efforts via **2015 Paris Agreement** and **2018 International Solar Alliance (co-launched with France). Trilateral cooperation**: India-France-Australia for Indo-Pacific, India-France-UAE for solar energy, climate, and biodiversity.
  - o **NPCI International Payments Limited (NIPL)** and France's Lyra Collect executed an agreement to implement **Unified Payment Interface (UPI)** in France and Europe.

France (Capital: Paris)

Important Features:

- **Borders:** Shares borders with **Belgium, Luxembourg, Germany, Switzerland, Italy, Monaco, Spain, Andorra**, and has coastlines along the **Atlantic Ocean, the English Channel,** and the **Mediterranean Sea.**
- **Key Mountain Ranges:**
  - o **Alps** (Southeast, including Mont Blanc, the highest peak in Western Europe), **Pyrenees, Jura Mountains, Vosges Mountains.**
- **Key Rivers: Seine River** (flows through Paris), **Loire River, Rhône River, Garonne River.**

2.2.4. INDIA-MAURITIUS

Why in News?

India and Mauritius elevated their ties to an **'enhanced strategic partnership'** during Indian Prime Minister's visit to the country.

More about news

- India announced India's **new vision for the Global South**, naming it **"MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions)"**.

India-Mauritius Relations: Key Facts

- **Strategic Location**: Mauritius's position in **western Indian Ocean** is crucial for India's maritime & regional security.
- **Renewable Energy**: Mauritius became the **first African country to sign International Solar Alliance's Country Partnership Framework.**
- **Maritime Security**: Mauritius is a part of the **Colombo Security Conclave with India, Sri Lanka, Maldives, and Bangladesh.**
  - India has developed **infrastructure on Agaléga island**, set up radar stations, and provided access to its naval Information Fusion Centre.
- **Economic Gateway**: As part of **African Continental Free Trade Area (AfCFTA)**, Mauritius is a key business gateway to Africa.
  - **The India-Mauritius Double Taxation Avoidance Agreement (DTAA)** also boosts investment.
- **Cultural Ties**: Approximately 70% of Mauritius's population is of Indian descent, fostering strong cultural and historical bonds; Also, Mauritius hosts the **World Hindi Secretariat.**

About MAHASAGAR

- Launched in **2025, MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions)** is an **expanded version of India's 2015 maritime policy, SAGAR** (Security and Growth for All in the Region).
- While SAGAR focused on **India's immediate neighborhood**, MAHASAGAR has **a broader reach,** especially **in the Global South**.
  - SAGAR facilitated deepening maritime ties through **information exchange, coastal surveillance, infrastructure development, and enhancing security capabilities.**
- **Key Focus Areas:** Trade for Development, Mutual Security, Technology Sharing, Financial Assistance.
- **New Initiatives under MAHASAGAR**
  - **Indian Navy** has launched maiden initiatives, **IOS (Indian Ocean Ship) Sagar** which are aimed at consolidating its role as the **'Preferred Security Partner'** and **'First Responder'** in the Indian Ocean Region (IOR).
    - Under it, **INS Sunayna** is being deployed to Southwest IOR with crew from **India and 9 friendly countries** (Comoros, Kenya, Madagascar, Maldives, Mauritius, Mozambique, Seychelles, Sri Lanka, South Africa).
  - **Indian Navy** has launched maiden initiatives AIKEYME in the Indian Ocean Region (IOR). It's a multilateral maritime engagement exercise with **African Countries** to enhance interoperability**.**
    - Titled as **'*AIKEYME*'**, which means **'Unity' in Sanskrit**.
    - **Participation from:** India, Tanzania as co-hosts and Comoros, Djibouti, Eritrea, Kenya, Madagascar, Mauritius, Mozambique, Seychelles and South Africa.

PT 365 - Updated Classroom Study Material

2.2.5. OTHER BILATERAL RELATIONS IN NEWS

2.2.5.1. NEW ZEALAND PRIME MINISTER'S VISIT TO INDIA TO STRENGTHEN BILATERAL TIES

Key Outcomes of the Visit

- **Indo-Pacific Oceans' Initiative (IPOI)**: New Zealand joined the initiative, strengthening maritime cooperation in the Indo-Pacific.
- **Coalition for Disaster Resilient Infrastructure (CDRI)**: NZ became a member to promote resilient infrastructure.
- **Free Trade Agreement (FTA)**: Negotiations for an FTA and professional mobility arrangements were launched.

India-New Zealand Relations: Key facts

- **Bilateral Trade**: India has a trade surplus with **New Zealand.**
- **Defense and Security**: Both Navies working together in **Combined Task Force-150 in the Indian Ocean.**
- **Green Energy**: NZ joined the India-led International Solar Alliance (ISA) in 2024.

2.2.5.2. INDIA AND QATAR ELEVATE BILATERAL RELATIONS TO STRATEGIC PARTNERSHIP

- **India-Qatar Relations: Key Facts**
  - **Energy Ties**: Qatar is India's largest LNG supplier; it imports around 70% of its needs for the natural gas from Qatar
  - **Defense Ties**: The India-Qatar Defense Cooperation Agreement was extended for five years in 2018.
  - **Bilateral Exercises**: Za'ir Al Bahr (Naval).

2.2.5.3. INDIA AND THAILAND SIGN JOINT DECLARATION TO ESTABLISH STRATEGIC PARTNERSHIP

- **India-Thailand Relations: Key Facts**
  - **Complementing Policies**: India's "Act East" policy aligns with Thailand's "Act West" policy.
  - **Regional Cooperation**: Thailand is an important partner in ASEAN, BIMSTEC, Mekong-Ganga Cooperation (MGC), Asia Cooperation Dialogue (ACD).
  - **Corridor**: India-Myanmar-Thailand Trilateral Highway (IMT-TH) connects **Moreh** in **Manipur**, India, to **Mae Sot** in **Thailand**, passing through **Myanmar**.
  - **Defence**: MAITREE (Army) and Indo-Thai CORPAT (Maritime)

2.3. PLACES IN NEWS

2.3.1. CONFLICT AFFLICTED AREAS

Balochistan (Capital: Quetta)

- **Context**: Balochistan, Pakistan's largest province, has recently been the epicenter of escalating violence.
- **Gwadar Port**, a deep-sea port crucial to the **China-Pakistan Economic Corridor (CPEC)**, lies in this region.
- **Surrounding Regions**: It shares boundaries with Iran, Afghanistan, and the Arabian Sea.
- **Cultural Heritage**: Home to **Mehrgarh,** one of the world's oldest known settlements.

Balochistan

Taiwan Strait (Or Black Ditch)

- **Context**: **China** launched new military drills named **"Strait Thunder-2025A"** in the middle and southern parts of the **Taiwan Strait**.
- **Historical Name**: The **Taiwan Strait** was named **Formosa** ("Beautiful").
- **Geographical Location**: The strait lies between **China's Fukien Province** and **Taiwan**.
- **Connecting Seas**: The strait extends from southwest to northeast, connecting the **South China Sea** and the **East China Sea**.
- **Median Line or Davis Line**: A line that runs approximately down the middle of the Taiwan Strait, though it is **not recognized by China**.

Taiwan Strait

Kara Sea

- **Context:** Recently, a Russian nuclear-powered vessel '50 Let Pobedy' collided with a cargo vessel in the Kara Sea.
- **Geographical Location:** The Kara Sea is a shallow marginal sea of the Arctic Ocean, located to the north of Siberia, Russia. It was formed due to the melting of glaciers during the last Ice Age.
- **Neighboring Seas: The Barents Sea** lies to the west, **The Laptev Sea** lies to the east.
- **Climate:** It is regarded as one of the coldest seas in the world.

Kara Sea

Netzarim Corridor

- **Context**: As part of the Israel-Hamas ceasefire agreement, Israel agreed to remove its forces from the **Netzarim corridor**.
- **Location**: The **Netzarim corridor** is a 6-kilometre-long stretch that controls key access points between Gaza's north and south.

Morag Axis

- **Context:** Israel has completed the takeover of a new security corridor known as the Morag axis.
- **Location:** The Morag axis is located in the Gaza Strip, primarily consisting of agricultural land between Khan Younis and Rafah, stretching from east to west.

Netzarim Corridor & Morag Axis
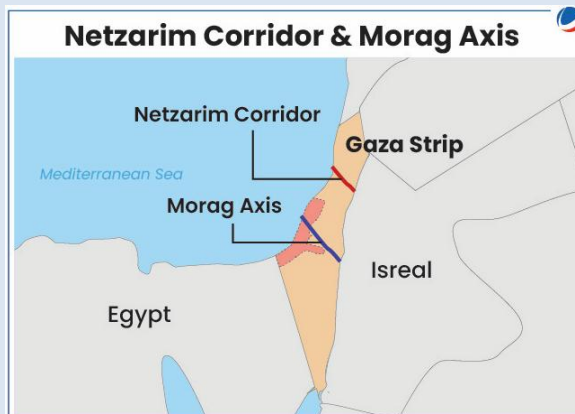
Darfur (Region in Sudan)

- **Context:** Recently, the Prosecutor of the International Criminal Court (ICC) called on the UN Security Council to act on the worsening atrocities in Sudan's Darfur region.
- **Location:** Darfur is a region located in the western part of Sudan.
- **Background:** The conflict escalated in 2003 when rebel groups, including the Sudan Liberation Army (SLA) and Justice and Equality Movement (JEM), launched an insurgency against the Sudanese government, citing the

Darfur

PT 365 - Updated Classroom Study Material

unequal distribution of economic resources as a major issue.

South Sudan (Capital: Juba)

- **Geographical Location**: South Sudan is a landlocked country located in northeastern Africa. It came into existence in 2011.
- **Abyei Region**: A disputed administrative area claimed by both South Sudan and Sudan.
- **Geographical Features:**
  - **The Nile River System**: The White Nile, a major tributary of the Nile, flows through the country.
  - **The Sudd Wetlands**: A massive swamp formed by the White Nile.

2.3.2. PLACES IN NEWS FEATURING INTERNATIONAL DEVELOPMENTS

Mongolia (Capital: Ulaanbaatar)

- **Context**: India and Mongolia have reaffirmed their commitment to strengthening the Strategic Partnership.
- **Geographical Location**: Landlocked country located in **north-central Asia.**
- **Geographical Features**:
  - **Landform**: Largely a plateau, with **80% of the area** consisting of steppes grasslands, and **the Gobi Desert** in the **south.**
  - **Major Mountain Chains**: Altai
  - **Longest River**: Orkhon River (Orkhon Valley is a UNESCO World Heritage Site).

Mongolia

Slovakia (Capital: Bratislava)

- **Context:** The President of India arrived in Slovakia for an official visit.
- **Geographical Location:** Slovakia is a landlocked country in central Europe.
- **Grouping:** Slovakia is a member of the European Union.
- **Geographical Features:**
  - **Mountain:** Carpathian Mountains.
  - **Major Rivers:** The Danube River, which originates in the Black Forest in Germany and flows through several countries, forming part of the border between Slovakia and Hungary.
- **Important Cities Along the Danube: Vienna (Austria); Bratislava (Slovakia, the capital); Budapest (Hungary); Belgrade (Serbia); Ruse (Bulgaria).**

Slovakia
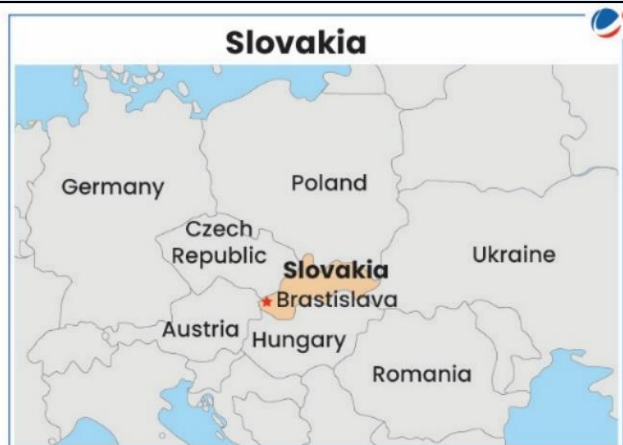
Portugal (Capital: Lisbon)

- **Context**: The President of India is on an official visit to **Portugal**.
- **Geographical Location**: Portugal is the **westernmost point of Europe**, located on the **west coast of the Iberian Peninsula**.
- **Autonomous Regions**: Portugal includes two autonomous regions: The **Madeira Archipelago &** The **Azores Archipelago**, both located in the **Atlantic Ocean**.
- **Terrain**: The **Tagus River** flows westward, dividing the country.

Portugal

Peru (Capital: Lima)

- **Context:** Peru has declared a state of emergency and deployed the army in the capital, Lima, following a surge in violence.
- **Location:** Situated on the western coast of South America, Peru connects the Pacific Ocean with the Andes and the Amazon Basin.
- **Geographical Features:**
  - **Drainage:** Amazon River, Lake **Titicaca** (world's highest navigable lake, shared with Bolivia).
  - **Forest:** Around 60% of Peru is covered by the Amazon rainforest.
- **Other Important Features:**
  - **Atacama Desert** (extends into the southern part of Peru from Chile).
  - **Humboldt Current** (cold ocean current).

Falkland Islands (Capital: Stanley)

- **Context:** Indian Naval Sailing Vessel (INSV) Tarini entered Port Stanley in the Falkland Islands under the Navika Sagar Parikrama II expedition.
- **Political Status:** A British Overseas Territory with self-governance, though the UK handles defense and foreign affairs.
- **Argentina claims the islands,** calling them Islas Malvinas, which led to the 1982 Falklands War.

Barbados (Capital: Bridgetown)

- **Context:** The Indian Prime Minister has been honoured with the Honorary Order of Freedom of Barbados award in recognition of his strategic leadership during the Covid-19 pandemic.
- **Geographical Location:** An island country in the southeastern Caribbean Sea, located in the North Atlantic Ocean, northeast of Venezuela.
- **Geographical Features:** Although it is geographically separate, Barbados is often grouped with the Lesser Antilles, which is a long arc of small islands in the Caribbean Sea, extending from the Virgin Islands to Grenada.

Dnipro River (Dnieper River)

- **Context:** Ukraine claims Russia is launching "suicidal missions" to gain a foothold over the Dnipro River (Dnieper River).
- **Geographical Location:** The river divides Ukraine into right-bank and left-bank regions, with the capital Kiev built on its banks.
- **Origin:** The river originates from the Valdai Hills in Russia, approximately 150 miles west of Moscow.
- **Flow:** The Dnipro flows through Russia, Belarus, and Ukraine, eventually emptying into the Black Sea.
- **Important Cities:** Kiev (Ukraine's capital, located on the river's banks), Zaporizhzhia (Ukraine); Smolensk (in Russia, where the river begins).

Heard Island and McDonald Islands

Context: The US President announced reciprocal 10% tariffs for several US trade partners, including Heard and McDonald Islands.

- The President called **April 2 "Liberation Day"** and declared it "one of the most important days in American history."
- **Geographical Location:** Heard Island and McDonald Islands are uninhabited subantarctic islands in the Southern Ocean, with no permanent human population.
- **Administration:** The islands are administered by Australia.
- **Geographical Significance:**
  o They are the only volcanically active **subantarctic islands.**
  o The islands are listed as **UNESCO World Heritage Sites.**

2.4. ISSUES RELATED TO SECURITY

2.4.1. UNLAWFUL ACTIVITIES (PREVENTION) ACT, 1967 (UAPA)

Why in the news?

The Ministry of Home Affairs (MHA) declared the Jammu and Kashmir-based organization as unlawful associations under the **Unlawful Activities (Prevention) Act, 1967**, imposing a five-year ban on the organization.

About Unlawful Activities (Prevention) Act, 1967

- **Origin:** Introduced as the **Unlawful Activities (Prevention) Ordinance, 1966**, in response to secessionist movements like the Naxalbari uprising.
- **Objective:** It provides for effective prevention of certain unlawful activities of individuals and associations and for dealing with terrorist activities.
- **Major Provisions of UAPA (Amended in 2019)**
  o **Terrorist Acts:** Criminalizes acts that threaten India's security, economy, or involve the use of funds for terrorism.
  o **Banning Terrorist Organizations:** Grants the government power to ban organizations deemed terrorist or a national security threat.
  o **Extended Custody and Investigation:** Allows remand periods of up to 30 days and judicial custody for up to 180 days before charges are filed.

- o **Bail Provisions**: Bail can be denied if the charges are believed to be prima facie true. The accused must prove the charges are false.
- o **Designation of Terrorists**: The government can designate individuals as terrorists, even without charging them with a crime.
- o **Prohibition on Fundraising for Terrorism**: Criminalizes raising funds for terrorism, with severe penalties for violators.
- o **Seizure of Property:** Director General of National Investigation Agency (NIA) can now approve seizure of terrorist-linked properties, expediting investigations.
- o **Prevention of Terror Financing**: Amended to align with international standards on combating terrorism financing, in line with FATF guidelines.

2.4.2. CONVENTION ON CLUSTER MUNITIONS

Why in the news?

Lithuania withdrew from **Convention on Cluster Munitions** citing security concerns over neighboring Russia.

- **Cluster munitions** are weapons designed to **disperse numerous smaller explosive submunitions**, or "**bomblets**," over a wide area when deployed.

Quick Overview of Convention on Cluster Munitions (CCM)

- The CCM is an **international treaty** that **prohibits all use, stockpiling, production, and transfer of cluster munitions.**
  - ◆ CCM was the outcome of **Oslo Declaration on Cluster Munitions (2007).**
  - ◆ Adopted in 2008 and entered into force in 2010.
- **Legal Status**: **Legally binding** international instrument under international humanitarian law.
- **India's Status**: **India is NOT a signatory** to the CCM.
- **Countries** like **Russia, China, US, etc.** are also not party of it.

2.4.3. GOLD SMUGGLING

Why in the news?

An actor was recently arrested for allegedly **smuggling of gold.**

The Laws Prohibiting Smuggling of Gold in India

- **Directorate of Revenue Intelligence (DRI)** is the **apex anti-smuggling body** of the Government of India.
- **The Customs Act, 1962:** It prohibits the **illegal import of gold without proper declaration and payment of applicable duties**, subjecting offenders to penalties including confiscation of goods, fines, and imprisonment**.**
  - o **Baggage Rules, 2016: Customs duty for the gold ranges from 3-10%,** depending upon the weight of gold and whether carried by a man or woman**.**
- **Bhartiya Nyaya Samhita, 2023:** Smuggling is punishable under **Organized Crime** which punishes **"trafficking illicit goods" with imprisonment of at least five years, extendable to life imprisonment.**
- **The Unlawful Activities (Prevention) Act, 1967 (UAPA):** It carries the punishment for smuggling as a **"terrorist act", if it causes "damage to the monetary stability of India".**

PT 365 - Updated Classroom Study Material

2.4.4. EXERCISES IN NEWS
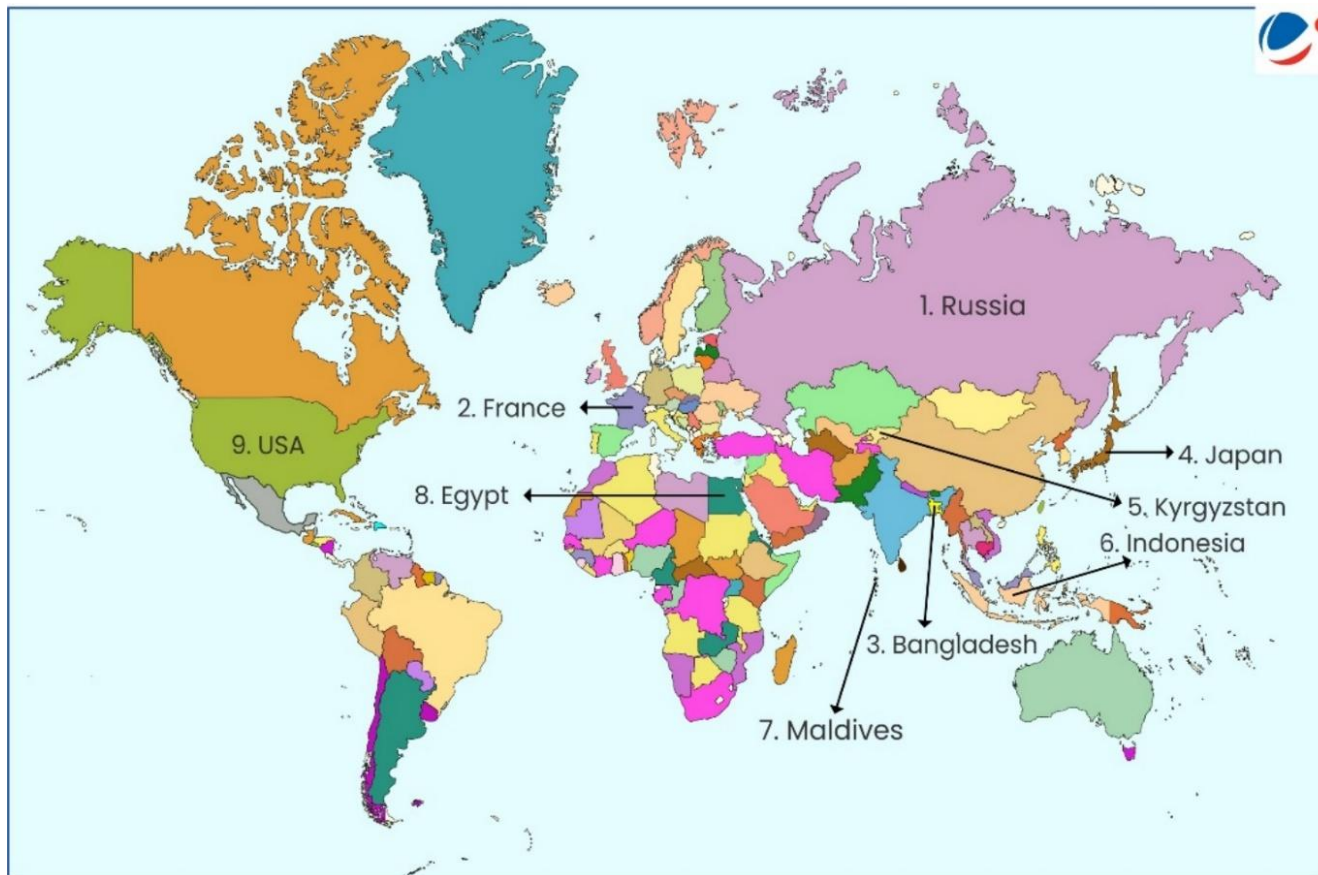
S.N.	Bilateral	Description
1	Exercise INDRA 2025	It is a **bilateral naval exercise** between **India and Russia,** taking place **since 2003**.
2	Varuna Exercise 2025	It is a bilateral naval exercise between India and France. **Location:** Arabian Sea.
3	Bongosagar 2025	It is a bilateral Naval Exercise between India-Bangladesh. Other bilateral exercise is **Exercise Sampriti:** Annual joint military exercise.
4	Exercise Dharma Guardian	It is the 6th edition of India-Japan joint military exercise
5	Exercise Khanjar	It is an **India-Kyrgyzstan Joint Special Forces Exercise**.
6	Exercise Komodo	First launched in 2014, it is a non-combat military exercise organized by Indonesian Navy to foster maritime cooperation among friendly nations.
7	Exercise Ekuverin	It is a bilateral annual exercise conducted alternatively in India and Maldives.
8	Cyclone 2025	India and Egypt to commence joint military exercise 'Cyclone 2025'.
9	Exercise Tiger Triumph	It is the Bilateral **Tri-Service India-US** Humanitarian Assistance and Disaster Relief **(HADR) Exercise.**
Multilateral		
INIOCHOS-25		Indian Air Force Participate in Multinational Air Exercise in Greece.

Humanitarian Exercise	
'Operation Brahma'	India Dispatches Humanitarian Aid to Myanmar Under 'Operation Brahma' After 7.7 Magnitude Earthquake.
Internal Defence Exercises	
Exercise Prachand Prahar	**Indian Armed Forces** (Army, Navy, Air Force) conducted a **tri-service integrated multi-domain** exercise, Prachand Prahar, in Arunachal Pradesh.
TROPEX – 2025	It is the Indian Navy's premier biennial war exercise.
Exercise Desert Hunt 2025	It was conducted by Indian Air Force at Air Force Station Jodhpur. It is an **integrated Tri-Service Special Forces exercise.** It involved elite units from all three services, **Para (Special Forces)** of Indian Army, **Marine Commandos (MARCOS)** of Indian Navy and **Garud Special Forces** of Indian Air Force.
Others	
Operation Sankalp	It was launched by **Indian Navy** to protect the **maritime community** from various **non-traditional threats** in the backdrop of **Israel-Hamas conflict.** It included **three areas of operations: Gulf of Aden** and adjoining areas, **Arabian Sea** and off the **East Coast of Somalia.**

PT 365 - Updated Classroom Study Material

3. ECONOMY

3.1. MISSION FOR COTTON PRODUCTIVITY

Why in the News?

The **'Mission for Cotton Productivity' was announced** during Budget 2025-26.

Mission for Cotton Productivity

- It is a **5-year mission** to facilitate improvements in **productivity and sustainability** of cotton farming, and promote **extra-long staple (ELS) cotton varieties**.
- **Ministry**: Ministry of Textiles.
- Aligned with the Government's integrated **5F vision (Farm to Fibre to Factory to Fashion to Foreign) for the textile sector**.

About Staple Cotton Fibre

A **staple** is an individual cotton fibre. Based on the **length of the staple, cotton is classified as very short, medium, long and extra-long staple cotton.**

- **Extra-long staple cotton: ≥34.925 mm**
  - It is a **premium cotton variety** cultivated in about 10% of the cotton area, contributing **4% of global production**.
  - **Major ELS Producing states in India**: Karnataka, Tamil Nadu, Madhya Pradesh etc.

About Cotton

- It is a commercial/cash crop also called **'White Gold'.**
- Cotton is a **soft, fluffy staple fiber** that grows in **a boll (protective case) around its seeds.**
- It is a **shrub (semi-xerophyte) native** to **tropical and subtropical** regions around the world, including the **Americas, Africa, Egypt and India.**
- **India** is reportedly the **only country which grows all 4 species of cotton**.
- **Climate & Soil Requirement**
  - **Temperature**:
    - optimum temperature is **21-27°C**.
    - It requires **at least 210 frost-free days** and **50 to 100 cm of rainfall** for its growth.
    - **Warm days of cool nights** with **large diurnal variations** during the period of **fruiting** are conducive to good boll & fibre development.
  - **Soil**: Cotton is **semi-tolerant to salinity** and **sensitive to water logging** and thus prefers light **well drained soils capable of retaining moisture.**
    - **It is grown in well drained deep alluvial** soils in the north, **black clayey soils** of varying depth in central region and **black and mixed black and red soils** in south zone.

India's Cotton Industry in the World

- **Acreage** Largest cotton area globally (40%)
- **Production** 2nd largest cotton producer (23.83%).
- **Export** Small share of global cotton exports (6%).
- **Consumption** 2nd largest cotton consumer (22.24%).

Other Steps taken for development of cotton sector

- **MSP for cotton**: declared by the Ministry of Agriculture for medium and long staple FAQ(Fair Average Quality) varieties, based on CACP recommendations, and procured by the Cotton Corporation of India (CCI).
- **Branding of Indian Cotton: Brand "KASTURI Cotton India"** launched to attain the objective of making India Atmanirbhar and vocal for local in the field of cotton.
- **Mobile App "Cott-Ally":** A farmer-friendly app to increase **awareness** about MSP of cotton, best farm practices etc.

3.2. MAKHANA

Why in the News?

Union Budget 2025-26 announced constitution of **Makhana Board in Bihar**.

About Makhana (Foxnut)

- **Makhana** is an important **aquatic flowering crop** .It is also referred to as the **'Black Diamond'** due to its dark outer layer.
- It is a plant of **tropical and subtropical climate** and is considered as **native of South-East Asia and China**.
- It is grown in **stagnant perennial water bodies** like ponds, land depressions, oxbow lakes, swamps and ditches with water depths of 4-6 feet.
- It is being recognized as a **super food due to its** rich in protein & fiber, antioxidant, anti-inflammatory properties. It also contains essential minerals like magnesium, potassium, & phosphorus.
- **Major Producing Regions**
  - **Domestic: Bihar (~90% of India's makhana production)**.
    - Makhana has been recognized under One District One Product (ODOP) for the districts of **Darbhanga and Muzaffarpur from Bihar.**
    - In 2022, '**Mithila Makhana'** was also conferred a GI tag.
    - **Other states:** West Bengal, Manipur, Tripura, Assam, Jammu & Kashmir, Odisha, Rajasthan, Madhya Pradesh & Uttar Pradesh.
  - **International:** Nepal, Bangladesh, China, Japan, Russia and Korea.

Preferred Climatic conditions for Makhana

- **Temperature:** 20°C to 35°C
- **Relative humidity:** 50% to 90%
- **Annual rainfall:** 100 cm to 250 cm
- **Soil:** Smooth loamy soil

3.3. PALM OIL

Why in the News?

The **palm oil's share** of India's total edible oil **imports fell below 30%** for 1st time in over a decade.

Palm Oil

- Palm oil is derived from the fruit of the African oil **palm tree**
  - Oil palm is a tropical plant that thrives in stable, warm climates. It is **native to Africa** but **currently Indonesia and Malaysia** make up over 85% of global supply.

Suitable climate conditions Palm Oil

Temperature: 30–32ºC (86–89.6ºF) for a minimum of 80 days.

Sunlight: Oil palm requires 5–6 hours of bright sunshine daily for proper development.

Humidity: High humidity levels, ideally between 75–100%.

Rainfall: Evenly distributed annual rainfall of 2,500–4,000 mm.

Palm Oil Production in India

- **Andhra Pradesh, Telangana and Kerala** (98% of the total production).
- India is the l**argest importer of palm oil in the world. India buys palm oil mainly from Indonesia, Malaysia and Thailand.**

3.4. LIQUIDITY DEFICIT

Why in the News?

The RBI conducted liquidity injections to address a near 15-year low deficit through OMOs (Open Market Operation) and USD/INR Swap (USD 10 billion (36-month tenor).

Forex Swaps
- To inject liquidity, RBI uses US Dollar/ Indian Rupee buy/sell swaps, where RBI buys dollars from banks in exchange for rupees, with the commitment to sell those dollars back at a later date.

Banking Liquidity

- **Definition:** Banking Liquidity refers to the reserves provided by a central bank to the banking system.
- **Formula:** Banking Liquidity = Net borrowing under Liquidity Adjustment Facility (LAF) – Excess reserves maintained by banks.
- **Liquidity Deficit:** Liquidity deficit is when banking system is a **net borrower** from the Reserve Bank (System demand is positive). Opposite is Liquidity Surplus.
- **Relation with Currency in Circulation (CIC):** Higher Currency in Circulation reduces bank reserves and lowers liquidity, while lower CIC increases reserves and boosts liquidity.

Factors leading to Liquidity Deficit

- **Tax Outflows**: ₹3 trillion in advance taxes (Dec 2024) reduced system liquidity.
- **JIT SNA-SPARSH Transition**: Shortened fund float in banks due to quicker government fund transfers.
- **Forex Market**:
  - **FII Sell-offs:** Capital outflows tightened liquidity.
  - **RBI USD Sales**: Curbed rupee depreciation but absorbed rupees.
- **Festive Withdrawals**: Cash demand during Diwali, Christmas, Mahakumbh 2025.

Impact of Liquidity Deficit

Higher Borrowing Cost: Low bank liquidity raises borrowing costs, which can impact NBFCs and strain funding for sectors like housing and MSMEs.

Policy Transmission Delay: Recent repo cut had minimal rate impact due to tight liquidity.

Credit Crunch: Lending tightens, slowing investment and consumption.

Market Volatility: Confidence shaken; asset prices impacted.

Note: To know more about RBI Monetary Tools refer to Article 1.1 in PT365 Economy 2025.

3.5. EQUALISATION LEVY

Why in the News?

The Equalization Levy (digital tax) on online ads has ceased from April 1, 2025.

Equalization Levy

- Introduced by the Finance Act, 2016, this **direct tax** targets income from digital transactions by foreign e-commerce companies in India, including income from advertising and business-to-business transactions.
- **Finance Act 2020** has extended scope of this levy to **e-commerce supply and services.**

Reasons for Imposing Equalization levy

- ➤ Fair Competition between local and global firms
- Taxing Digital Giants with no physical presence in India
- Preventing **Tax Avoidance**
- Boosting Revenue, especially post-COVID digital growth
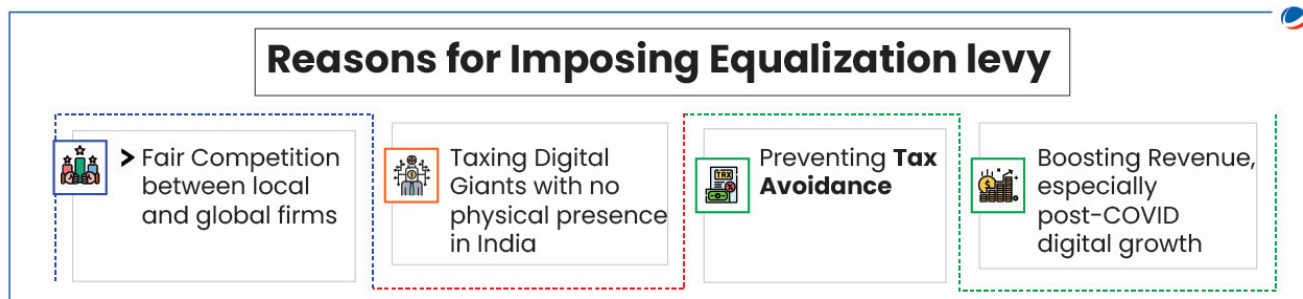
3.6. PRIORITY SECTOR LENDING

Why in the news?

RBI has issued new **Priority Sector Lending (PSL) guidelines,** which came into effect on April 1, 2025.

Loan Limit Enhancements

- **Education:** Up to ₹25 lakh (incl. vocational).
- **Social Infrastructure**: ₹8 crore/borrower (e.g. schools, water facilities).
- **Renewable Energy:** ₹35 crore for power/public utilities; ₹10 lakh for households.
- **Urban Co-operative Banks (UCBs) Targets**
  - **Total PSL**: 60% (from 40%)
  - **Micro Enterprises:** 7.5%
  - **Weaker Sections**: 12%
- **Weaker Sections' Expanded:** Transgenders, Distressed borrowers, Artisans, SHG members, Minorities, Women Up to ₹2 lakh (excl. UCBs).

Additional Changes

- NBFC/HFC on-lending now under PSL. Co-lending (banks + NBFCs) eligible.
- Gold-backed NBFC loans excluded from securitisation.
- Trading of **Priority Sector Lending Certificates (PSLCs)** allowed meeting targets.
- IBPCs and Direct Assignment norms are updated to ensure proper classification.
  - **Inter-Bank Participation Certificates (IBPCs)** and Direct Assignments are key instruments used by banks for managing liquidity and transferring credit risk.

Note: To know more about PSL refer to Article 1.2 in PT365 Economy 2025.

3.7. DEPOSIT INSURANCE

Why in the news?

The government may raise bank deposit insurance beyond ₹5 lakh.

About Deposit insurance

- Protects depositors, especially small ones, against **bank failures.**

- o Applies **separately** to deposits in different banks.
- **Current cover:** ₹5 lakh per depositor per bank, across all account types (savings, fixed, current, recurring).
- **Banks covered**: mandatory for all commercial banks, foreign bank branches in India, local area banks, regional rural banks, and cooperative banks, but **excludes land development banks and non-banking financial companies.**
- **Insured Amount:** Insures both **principal and interest**, excluding deposits by foreign, central/state governments, and inter-bank deposits.
- Post-2021 amendment, interim payouts (within 90 days) allowed when RBI restricts bank operations.
- Insurance premium is paid by banks, collected by DICGC at flat or risk-based rates.

> **About Deposit Insurance and Credit Guarantee Corporation (DICGC)**
>
> - Established on **January 01, 1962** under the DICGC Act, 1961.
>   - o India was the **second country (after the US in 1933)** in the world to provide for such provision.
> - It is a **wholly owned subsidiary** of the **Reserve Bank of India**.
> - **Head Office:** Mumbai.

3.8. PFRDA (OPERATIONALISATION OF THE UPS UNDER NPS (NATIONAL PENSION SYSTEM)) REGULATIONS, 2025

Why in the news?

The regulation provides a **detailed framework for the implementation of the UPS** (refer to the infographic).

The Unified Pension Scheme (UPS)
Balancing Government Fiscal Policy and Employee Benefits

UPS combines the best of both worlds:

Defined Benefit (like Old Pension Scheme)	Contributory System (like National Pension Scheme)

UPS Contribution Structure

• Individual Corpus (PRAN Account) o Employee: 10% of Basic Pay + Dearness Allowance (DA) o Government: Matches 10% to PRAN	• Pool Corpus o Common Fund for all UPS Subscribers o Government: Extra 8.5% of Basic Pay + DA

Total Government Contribution: 18.5%

Pension Payouts: Dependent on market returns, primarily from government debt investments.

Key Highlights of the Regulation

- **Nodal Ministry:** Ministry of Finance.
- **Applicability:** Three categories of central government employees can opt-in (once opted for UPS, the decision is final and irreversible):
  - o **Existing NPS employees** as on April 1, 2025.
  - o **Recruits** joining on or after April 1, 2025.
  - o **Retired NPS employees** (retired on or before March 31, 2025) or their legally wedded spouses (in case of demise of subscribers).
- **Service Duration Eligibility for UPS Benefits**
  - o **Superannuation**: Available after **10 years of service**, payable from the retirement date.
  - o **Voluntary Retirement**: Requires **25 years of service**, payout starts from the notional superannuation date.
  - o **Exclusions**: No benefits for **removed, dismissed, or resigned employees**.
  - o **Proportionate Payout**: If service is **10 to 25 years**, a reduced pension is provided.

- **Investment & Fund Management**
  - o **Individual Corpus**: Employees can choose **investment patterns and pension funds**.
  - o **Pool Corpus**: Managed by **government-approved pension funds**, audited annually.

HQ: New Delhi

About Pension Fund Regulatory and Development Authority (PFRDA)

Genesis: Established through a **resolution** by the Government of India in **2003.**

Statutory body established under **PFRDA Act, 2013.**

Objective: To promote old-age income security by establishing, developing and regulating pension funds to protect the interests of the subscribers of pension fund and related matters.

Ministry: Works under the Ministry of Finance.

Composition: Chairperson and not more than six members, appointed by the **Central Government** with expertise in **economics, finance, or law** (at least one from each).

Functions:
- ➤ Registering and regulating intermediaries- NPS Trust, Points of Presence, Central Record keeping Agency, Trustee Bank, Pension Funds, Custodian for time bound service to subscribers.
- ➤ Adjudication of disputes between intermediaries and between intermediaries and subscribers.

Implementing Agency for Initiatives: Atal Pension Yojana (APY), National Pension System (NPS), NPS-Vatsalya.

3.9. RATIONALIZATION OF CUSTOMS TARIFF STRUCTURE

Why in the News?

Union Budget 2025 proposes rationalization of Customs Tariff Structure, amid a **global trade war.**

Key Changes Announced to Customs tariffs

- **Reduced the total number of custom tariff rates to 8** including the zero rates from 15 earlier.
- Proposed to **levy not more than one cess or surcharge**. Therefore, exempted Social Welfare Surcharge on 82 tariff lines that are subject to a cess.
- Apply appropriate cess to broadly maintain effective duty incidence except on a few items.

Tools of Trade War

Tariffs
Taxes on imported goods to increase prices.

Non-Tariff Barriers
Obstacles to trade not involving taxes.

Import Quotas
Limits on the amount of goods that can be imported.

Currency Manipulation
Practices to affect currency value for trade advantage.

PT 365 - Updated Classroom Study Material

Trade war

- **Trade wars** are **economic conflicts** involving **tariffs or trade barriers** that can **disrupt global supply chains**, **raise costs**, and **slow economic growth**.
- Recently USA imposed reciprocal tariffs on several countries. Experts believes that it could ignite a trade war.
  - o **Reciprocal tariffs** refer to a trade policy where a country's tariffs on imports are matched by tariffs imposed by another country on its exports.
  - o Essentially, it's a "tit-for-tat" approach to trade, aiming to level the playing field and counter perceived unfair trade practices.

3.10. MSME TRADE ENABLEMENT AND MARKETING INITIATIVE

Why in the News?

Ministry of MSMEs Launched MSME Trade Enablement and Marketing (TEAM) Initiative under the **RAMP.**

About TEAM Initiative

- **Aim:** Empower MSMEs by providing access to digital commerce through ONDC, enhancing market reach and reducing business costs, while leveraging Digital Public Infrastructure to support MSEs.
- **Duration:** FY 2024-2025 to FY 2026-2027.
- **Target beneficiaries:** 5 lakh MSEs (50% will be women owned MSEs).
- **Implementing Agency:** National Small Industries Corporation (NSIC).
- **Eligibility Criteria: MSEs with valid Udyam Registration** under manufacturing or service sectors.
  - o **Medium Enterprises are not eligible** for most benefits.

About RAMP (Raising and Accelerating MSME Productivity)

- **It** is the **World Bank supported Central Sector Scheme** implemented by **Ministry of Micro, Small & Medium Enterprises** (MoMSMEs) over the 5 year period **2022-23 to 2026-27**.
- **Objective:** To **improve access of MSMEs to market, finance** & **technology** upgradation by enhancing the outreach of existing MoMSME schemes.

3.10.1. OTHER DEVELOPMENTS RELATED TO MSMES

Digital Footprint-Based Lending For MSMEs	Ministry of Finance launched a new credit assessment model using MSMEs' digital footprints to streamline credit appraisal and disbursement. **About New Credit Assessment Model** • leverage the **digitally fetched and verifiable data** available in the ecosystem and devise automated journeys for MSME loan appraisal. • to improve **financial inclusion**, reduce reliance on traditional credit scores, and support MSMEs
Swavalambini	**Ministry of Skill Development and Entrepreneurship** in collaboration with **NITI Aayog** have launched Swavalambini— Women Entrepreneurship Programme. **About Swavalambini– Women Entrepreneurship Programme** • **Objective:** Empower female students in **Higher Education Institutions** with entrepreneurial **skills, resources, and mentorship.** • **Implementation: National Institute for Entrepreneurship and Small Business Development**.
DX-EDGE	Recently, **DX-EDGE (Digital Excellence for Growth and Enterprise)** initiative was launched by CEO, NITI Ayog. **About DX-EDGE**

	• **Spearheaded By: Confederation of Indian Industry (CII)** with the support of **NITI Frontier Tech Hub (NITI FTH)** and **All India Council for Technical Education (AICTE).** • **Aim:** Empowering India's **MSMEs** to become **resilient, competitive, and digitally enabled** by leveraging digital technologies and sector-specific strategies.
SWAYATT Initiative	SWAYATT initiative on Government e Marketplace (GeM) celebrates 6 years of transformative impact. • **GeM is an online platform** offering end-to-end solutions **for procurement of common use goods and services by government buyers.** **About SWAYATT Initiative** • launched in 2019 on GeM.,**it stands for Startups, Women & Youth Advantage through eTransactions.** • **Objective:** To invigorating participation of women-led enterprises and youth in public procurement.
AI for Entrepreneurship' Micro-learning Module	**Ministry of Skill Development and Entrepreneurship** launched the **'AI for Entrepreneurship' micro-learning module.** **AI for Entrepreneurship' Micro-learning Module** • **Launched in** collaboration with **National Skill Development Corporation (NSDC) and Intel India** • **Purpose:** To simplify **AI concepts and encourage entrepreneurial thinking** among young innovators across India. • **Target**: To **empower 1 lakh youth by 2025** by equipping them with **essential skills** to thrive in a technology-driven economy.

3.11. MAJOR AND MINOR MINERALS

Why in the news?

The Ministry of Mines has reclassified **Barytes, Felspar, Mica, and Quartz** from **minor minerals** to **major minerals**.

Reclassification

- Reclassification is based on recommendations of **Inter-Ministerial Committee led by Dr. V. K. Saraswat.**
  - **Quartz, Felspar, & Mica** are found in **pegmatite rocks**, which also contain **essential critical minerals** like **Beryl, Lithium, Niobium, Tantalum, Molybdenum, Tin, Titanium, and Tungsten**
- **Baryte and its Industrial Significance**
  - Baryte often occurs in **concretions and vein fillings** in **limestone and dolostone**, alongside ores of **Antimony, Cobalt, Copper, Lead, Manganese, and Silver**.
  - It has extensive **industrial applications** in **oil and gas drilling, electronics, TV screens, rubber, glass, ceramics, paint, radiation shielding, and medical applications**.

About Major and Minor Minerals

- **Classification:** Under the **Mines and Minerals (Development and Regulation) (MMDR) Act, 1957,** minerals are broadly classified in two categories.
  - **Minor minerals:** Building stones, gravel, ordinary clay, ordinary sand other than sand used for prescribed purposes and **any other mineral which the Central Government may declare** to be a minor mineral.
  - **Major minerals:** Include all minerals other than minor minerals. E.g. Coal, Iron, Zinc, Limestone etc.
- **Framework for Governance:**
  - **Legal Framework for Mineral Regulation:**

> The **MMDR Act, 1957** is the primary law governing the mining sector, **except for petroleum and natural gas.**
> **Mineral Concession (MC) Rules, 1960**: Regulates permits, licenses, and leases for all minerals **except Atomic and Minor Minerals**.
> **Role of State Governments in Mineral Regulation: Section 15 of MMDR Act, 1957**: Gives **State Governments** the power to **make rules** for **minor minerals**.

About DMF

- **Ministry of Mines**, through amendment in **Mines & Minerals (Development & Regulation) (MMDR) Act, in 2015**, has made a provision for establishment of DMF in all districts affected by mining.
- **DMFs** are established as a non-profit Trust in 645 districts across 23 states.
- **Objective**: To work for the interest and benefit of persons and areas affected by mining related operations.
- Composition and functions of DMF shall be such as may be prescribed by State Government.
- DMF also given responsibility to implement **Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY)**.
  - Under PMKKKY, **70% of fund** should go for **high priority include drinking water supply, environment preservation)** & **30%** for other priority sectors(physical infrastructure, irrigation, energy).

3.12. NATIONAL WATERWAYS (CONSTRUCTION OF JETTIES/ TERMINALS) REGULATIONS, 2025

Why in the news?

The Inland Waterways Authority of India (IWAI) issued the National Waterways (Construction of Jetties/ Terminals) Regulations, 2025.

Key Provisions

- **Aim**: Attract private investment, streamline processes, and promote efficient use of India's waterways.
- **Scope**: Entities wishing to develop or operate terminals on national waterways must obtain a No-Objection Certificate from IWAI.
- **Digital Portal**: IWAI will develop a portal to enhance efficiency and transparency for Ease of Doing Business.
- **Developer Responsibilities**: Terminal developers are responsible for technical design and construction.

Status of Inland Waterways

- **Navigable Waterways:** 14,500 km of rivers, canals, and backwaters.
- **Trade Comparison**: In India, only 3.5% of trade moves through waterways, compared to 47% in China, 40% in Europe, and 35% in Bangladesh.

Initiatives

- **IWAI**: Established in 1986 to develop and regulate National Waterways.
- **Jal Marg Vikas Project (2014):** Improving the 1390 km stretch of NW1 (Varanasi to Haldia) with World Bank support.
- **National Waterways Act, 2016**: Declared 111 waterways as National Waterways.
- **Tonnage Tax Scheme**: Expanded in Budget 2025-26 for inland vessels under the Indian Vessels Act, 2021.
- **Jalvahak Scheme (2024):** Aims to promote cost-effective, safe, and timely cargo delivery through inland waterways.

National Waterways

NW-1
GANGA
HALDIA TO ALLAHABAD
1,620 Km STATES SERVED:
UP, Bihar, Jharkhand and
West Bengal

TOTAL LENGTH:
4,503 KM

TOTAL STATES SERVED
15

NW-2
BRAHMAPUTRA
DHUBRI TO SADIYA **891 Km**
STATES SERVED: Assam,
West Bengal, Arunachal
Pradesh, Meghalaya

Delhi

NEPAL
Ganga River

Allahabad

Narmada River

Tapi River

Talcher

Krishna River

Kakinada
Canal

Buckingham
Canal

Kakinada

Eluru Canal

Mandovi, Zuari River &
Cumberjua Canal

Udyog Amanda
Canal

Kottapuram Puduchery

Kollam

NW-6
BARAK
LAKHIPUR TO BHANGA (IN
PROCESS) **121 Km** STATES
SERVED Assam, Mizoram,
Manipur, Tripura

NW-3
WEST COAST CANAL
KOLLAM TO KOTTAPURAM **205 Km**
STATE SERVED: Kerala

NW-5
BRAHMANI, DELTA CANALS, ECC
GOENKHALI TO TALCHER
588 Km STATES SERVED: Odisha, West Bengal

NW-4
GODAVARI, KRISHNA & CANALS
KAKINADA TO PUDUCHERY **1,078 Km** STATES SERVED: AP,
Tamil Nadu, UT of Puducherry

3.13. URBAN CHALLENGE FUND (UCF)

Why in the news?

Budget 2025-26 announced the creation of **Urban Challenge Fund (UCF).**

What is the Urban Challenge Fund (UCF)?

- UCF of Rs 1 lakh crore aims to encourage states to think innovatively towards attaining sustainable urbanisation and redevelopment goals in existing cities.
    o **F**und is to implement the proposals for '**Cities as Growth Hubs', 'Creative Redevelopment of Cities'** and **'Water & Sanitation'**
- **Financing Mechanism:** Fund will finance up to **25% of the cost of bankable projects** with a stipulation that at least **50% of the cost is funded from bonds, bank loans, and PPPs.**

Urbanisation in India

- **As per Census 2011,** an **urban unit in India is** referred to as:
    o All **administrative units** that have been **defined by statute as urban** like Municipal Corporation, Municipality, Cantonment Board, Notified Town Area Committee, Town Panchayat, Nagar Palika etc. are known as **Statutory Town.** Further, Statutory Towns with population of 1,00,000 and above are categorized as cities.
    o All other places which satisfied the following criteria:
        > A **minimum population of 5,000 persons;**

> **75% and above** of the male main working population being engaged in **non-agricultural pursuits;** and;
> A density of population of at **least 400 persons per sq. km.** (1,000 per sq. mile).
- Urban population increased from **27.7% in 2001 to 31.1% in 2011,** at a **rate of 2.76%** per year.
- **Urban Planning** is a **state subject** as per the **12th Schedule** of the Constitution.

3.13.1. OTHER KEY INITIATIVES ANNOUNCED IN BUDGET 2025-26

Initiatives	Details
Building Rural Prosperity and Resilience Program	• **Purpose:** launched in **partnership with states** to address **under-employment in agriculture**. • **Key Focus Areas**: **Skilling, investment, and technology** to invigorate rural economy. • **Target Beneficiaries**: Rural women, young farmers, marginal & small farmers and landless families. ○ Implementation will follow global and domestic best practices, with technical and financial support from multilateral banks. Phase-1 will cover 100 developing agri-districts.
Grameen Credit Score' Framework	• Public Sector Banks will create frameworks to serve rural and SHG credit needs, as current generic credit scoring by CICs overlooks rural-specific factors.
Mission for Aatmanirbharta in Pulses	• **6-year mission** with a special focus on Tur, Urad and Masoor. • **Key Priorities**: **Climate-resilient seeds** development, **higher protein content** in pulses, **Improving post-harvest storage & management** etc. • **Central agencies (NAFED and NCCF)** will **procure these 3 pulses,** as much as offered during **next 4 years** from **registered farmers.**

3.14. OTHER KEY DEVELOPMENTS

3.14.1. E-NAM (NATIONAL AGRICULTURAL MARKET) PLATFORM

With the addition **of 10 new commodities** (Chickpea Flour, Dried Tulsi Leaves, Dragon Fruit, etc.), the number of commodities on e-NAM **platform reaches 231.**

About e-NAM

- **e-NAM is a pan-India electronic trading portal** which networks the existing APMC Mandis creating a unified national market for agricultural commodities.
- **Launched:** 2016.
- **Implementing Agency**: Small Farmers Agribusiness Consortium (SFAC), under Ministry of Agriculture and Farmers' Welfare.
- It is **not a parallel marketing platform** but leverages the **physical infrastructure of existing Agricultural Produce Market Committees (APMCs).**
  ○ **APMCs:** Governed by the **State APMC Acts**, enacted under the **Agricultural Produce Market Regulation Act, 1963**, which varies across states.

3.14.2. TOBACCO

India's tobacco exports have doubled over the last 4 years.

Tobacco

- **India's Status: Second largest producer** (after China) as well as **second largest exporter** (after Brazil).
- **Major Producing States:** Gujarat (45% of total cultivated area, 30% production), Andhra Pradesh, Karnataka, UP and Bihar.
- **Favourable Conditions:**
  ○ **Temperature**: Between 20° to 27°C is required.

- o **Rainfall:** When grown as a rainfed crop then requires at least about 500 mm of well-distributed rainfall during the crop growing season. (Usually not grown in the area if rainfall exceeds 1200 mm).
- o **Soil:** Sandy or sandy loam soil. Cigarette-tobacco growing areas of Andhra Pradesh are an exception in that as the crop is grown on heavy black soil.

3.14.3. GUM ARABIC (ACACIA GUM)

Smuggling of Gum Arabic from **war-torn Sudan** is impacting **global supply chains.**

- **Sudan** produces **~80% of the world's gum arabic**.

About Gum Arabic (Acacia Gum)

- It is a **dried water-soluble exudate** obtained from the **Acacia trees.**
  - o **Acacia trees** grow across **Africa's Sahel region** – known as the **'gum belt'** and are well-known landmarks in the **veld and savanna.**
- **Composition**: **Polysaccharides** and its calcium, magnesium, and potassium salts, which on hydrolysis yield **arabinose, galactose, rhamnose, and glucuronic acid.**
- **Uses**: **Emulsifier, stabilizer, and thickener** in **food** industry, **cosmetics**; painting, soft drinks, **pharmaceuticals** etc.
  - o It is an ideal **functional dietary fibre ingredient in food.**

3.14.4. NEW HARMONISED SYSTEM CODES FOR GI TAGGED RICE

An amendment to the **Customs Tariff Act (1975)** was introduced to provide **an HS (Harmonised System) code for GI-recognised rice varieties.**

About HS

- **Definition:** it is a **global product classification system developed by World Customs Organization (WCO)**.
- **Classification Structure:**
  - o HS assigns specific **6-digit codes for varying classifications and commodities.**
  - o **Countries are allowed to add longer codes** to the first six digits for further classification.
- **Governance and Updates**
  - o It is governed by "**The International Convention on the Harmonized Commodity Description and Coding System**".
  - o **HS Committee**, made up of member countries, oversees the HS classification system and also updates **HS every 5 – 6 years**.
- **Widespread adoption:** Classifies approximately **98% of international trade.**

HQ: Brussels, Belgium

About World Customs Organization (WCO)

Genesis: Established in 1952 as the **Customs Co-operation Council (CCC)**

Role: Independent intergovernmental body whose mission is to **enhance the effectiveness and efficiency of Customs administrations.**

Focus: It is exclusively focused on **customs matters.**
Its work includes the development of global standards, the simplification and harmonization of customs procedures, trade supply chain security, the facilitation of international trade, etc.

Members: WCO represents **186 Customs administrations** (including India)

PT 365 - Updated Classroom Study Material

3.14.5. DIGITAL PAYMENTS INDEX (DPI)

Recently, **RBI published** the **Reserve Bank of India–Digital Payments Index** (RBI-DPI).

About RBI-DPI

- **Objective:** Capture the extent of digitisation of payments systems & measure the adoption of online transactions.
- **Released frequency:** Semi-annual (March & September).
- **Base Period:** March 2018.

Parameters for Digital Payments Index

Payment Enablers | Payment Infrastructure (demand-side factors) | Payment Infrastructure (supply-side factors) | Payment Performance and | Consumer Centricity.
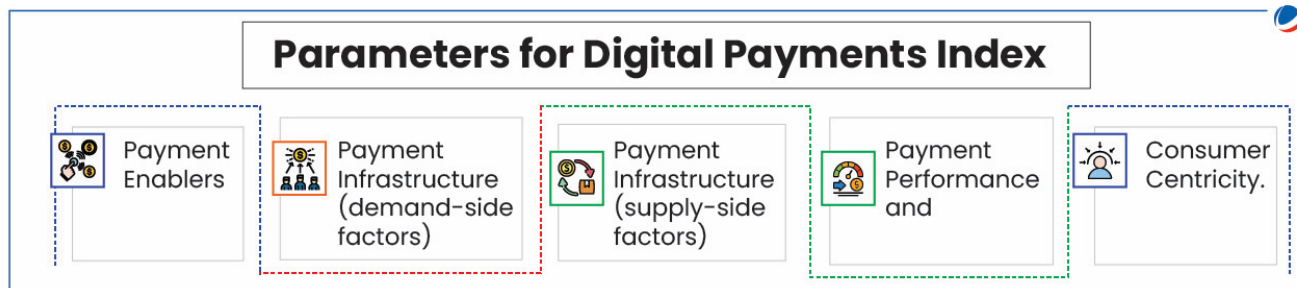
3.14.6. SOVEREIGN GREEN BONDS (SGRBS)

Recently, **Sovereign Green Bonds (SGrBs)** are seeing limited investor interest due to **lower yields.**

About SGrBs

- **About:** These are **debt instruments** issued by the **Union government** to raise money for environmentally friendly **green projects.**
  - Green Projects encourage energy efficiency in resource utilization, reduce carbon emissions, promotes **climate resilience**, and **values and improves natural ecosystems** and biodiversity.

3.14.7. FEMA, 1999

RBI asks state-run banks to penalize firms violating FEMA (Foreign Exchange Management Act), 1999 by taking guarantees from foreign banks.

About FEMA, 1999

- It replaced the **Foreign Exchange Regulation Act (FERA), 1973.**
- **Objective**: **Facilitates external trade & payments**, promotes **orderly forex market development.**
- **Jurisdiction**: **Applies across India** and to **Indian entities abroad.**
- **Directorate of Enforcement** investigates **violations** under the Act.

3.14.8. STAGFLATION

Recent news reports indicate a return of **stagflation** in the **US market**.

About Stagflation

- **Definition**: Stagflation is an economic condition combining **slow economic growth, high unemployment,** and **rising inflation.**
- **Causes**: Often triggered by **supply-side shocks** (e.g., sudden oil price increases) that raise production costs, leading to inflation and reduced economic activity.

3.14.9. ALGORITHMIC TRADING

SEBI has proposed new rules for retail algorithmic trading framework.

- Algorithmic trading automates buy/sell orders based on preset conditions for precise execution. Previously, only institutional investors used it via Direct Market Access.

Key Highlights of Regulatory Framework

- **Categorization of Algorithms:**
  - **White-box:** The logic is disclosed and replicable (e.g., Execution Algos).
  - **Black-box:** The logic is unknown to the user and not replicable.
- **Trading Limits for Retail Traders:** Retail traders must follow exchange-set limits (yet to be decided).
- **Registration of Algo Providers:** Algo providers are not regulated by SEBI, but must register with exchanges and partner with a broker to sell algos.

3.14.10. REINSURANCE

Valueattics Re has become the **first private firm** to receive IRDAI's nod to **commence reinsurance business in India.**

- Currently, public sector **General Insurance Corporation (GIC Re) is the only** reinsurance company operating in India.
- Reinsurance is a **risk management practice** where **insurance companies transfer a portion of their risk to another insurance company (reinsurer)** to protect themselves from large financial losses.

> **FDI Limit Hiked In Insurance Sector**
>
> - The Finance Minister proposed raising the FDI limit in the insurance sector from 74% to 100% for companies investing the entire premium in India..

Note: To know more about Insurance Sector refer to Article 7.4 in PT365- Economy (2025).

3.14.11. GOLD PRICES SURGES TO ALL TIME HIGH

The price of 24-carat gold surged to Rs 1 lakh per 10 grams for the first time in India

Key Global Factors Driving Price Surge

- **Geopolitical Tensions:** Rising global conflicts and economic uncertainties have led investors to flock to gold, which is seen as a *safe-haven* asset.
- **US Federal Rate Cuts:** With falling interest rates, appeal of gold increases. As a non-yielding asset, gold becomes more attractive when the opportunity cost of holding cash/bonds drops.
- **Weakening of US Dollar:** A declining dollar makes gold cheaper for buyers using other currencies, thereby boosting demand.
- **Central Bank Accumulation:** Central banks, especially in Asia, are aggressively purchasing gold to reduce dependency on the US dollar and diversify reserves.

> **Gold Reserves**
> **India**
> - **Gold Ore:** Bihar (43%) followed by Rajasthan (24.92%), Karnataka (20%).
> - **In Metal Content:** Karnataka (1st), Rajasthan (2nd), Andhra Pradesh (3rd), & Bihar (4th).
> **World**
> - **Major Holders of Gold Reserves**: **United States**, followed by **Germany** and **Italy**.
> - **Major Exporters:** GERMANY followed by EU & Switzerland (2023).

India's Gold Market

- **India is the world's 2nd largest consumer of gold**, just after China.
- **Approximately 85% of India's gold is imported**.

3.14.12. ENHANCED CERTIFICATE OF ORIGIN (ECOO) 2.0 SYSTEM

The Directorate General of Foreign Trade (DGFT) has launched the enhanced **Certificate of Origin (eCoO) 2.0 System.**

- **Certificate of Origin** is a **document used in international trade** to certify that the goods being exported **originated in a specific country.**

- As **per the new rule**, an importer will now be required to submit **'proof of origin'** as against **'certificate of origin'** to preferential rate of duty in terms of a trade agreement.

3.14.13. INITIATIVES TO MODERNISE INDIA'S MARITIME INFRASTRUCTURE

Ministry of Ports, Shipping and Waterways launched a series of initiatives to modernise India's maritime infrastructure.

- **Key Initiatives**
  o **One Nation-One Port Process (ONOP):** Standardizes operations across India's major ports.
  o **Sagar Ankalan**: Evaluates major and non-major ports under the Logistics Port Performance Index (LPPI) for FY 2023-24, aligned with PM Gati Shakti and the National Logistics Policy, 2022.
  o **Bharat Global Ports Consortium:** Strengthens logistics and supply chains, supporting 'Make in India' and boosting exports through improved port infrastructure.
  o **MAITRI Logo (Master Application for International Trade and Regulatory Interface):** Streamlines trade, reduces bureaucracy, and expedites clearances, supporting ease of doing business. It aids the Virtual Trade Corridor (VTC) between India and UAE and aligns with the India-Middle East-Europe Economic Corridor (IMEEC).

3.14.14. SAGARMALA START UP INNOVATION INITIATIVE (S2I2)

Sagarmala Start Up Innovation Initiative (S2I2) was launched at the National Sagarmala Apex Committee (NSAC) to Boost Port Led Development.

About S2I2

- **Aim**: Empowering **startups** working in areas such as **green shipping, smart ports, maritime logistics, shipbuilding technology, and sustainable coastal development.**
- It will accelerate RISE— **Research, Innovation, Startups, and Entrepreneurship**.
- It will offer **funding, mentorship, and industry partnerships** to nurture cutting-edge solutions.

3.14.15. SAMARTH

Centre for Development of Telematics launches 'Samarth' a cutting edge **Incubation Program** for **telecommunications** and **IT sectors**.

About Samarth

- **Aim: Encourage** the development of **sustainable and scalable business models**, offer access to **cutting-edge resources**, and help **Startups Bridge the** gap from ideation to commercialization.
- **Implementation Partner:** Software Technology Parks of India (STPI), premier S&T organization under Ministry of Electronics and Information Technology (MeitY).

3.14.16. NAKSHA

Ministry of Rural Development to Launch Pilot Project "National Geospatial Knowledge-based Land Survey of Urban Habitations (NAKSHA)".

About NAKSHA

- **Background:** Announced in 2024 as part of **Digital India Land Records Modernization Programme (DILRMP).**
- **Aim**: To create & u**pdate land records in urban areas** to ensure r**eliable documentation of land ownership.**
- **Coverage:** 1-year pilot programme in **152 Urban Local Bodies across 26 States and 3 UTs.**
- **Technical Partner**: **Survey of India**
  o End-to-end web-GIS platform will be developed by the **Madhya Pradesh State Electronic Development Corporation (MPSEDC)**
- **Coordination:** A State Level Committee (SLC) under the Chief Secretary.

3.14.17. MAHARATNA STATUS

Recently Hindustan Aeronautics Limited (HAL) became 14th Maharatna company.

Criteria for grant of Maharatna status

Criteria for grant of Maharatna status

Status	Financial Requirements	Global Presence	Listing Requirements
Must have **Navratna status.**	Average **annual turnover: >Rs. 25,000 crore during the last 3 years.** Average **annual net worth: >Rs. 15,000 crore during the last 3 years.** Average **annual net profit after tax: >Rs. 5,000 crore** during the last 3 years.	Should have significant **global presence/international operations.**	**Listed on Indian stock exchange** with minimum prescribed public shareholding under SEBI regulations.

3.14.18. GLOBAL CAPABILITY CENTRE (GCC)

Madhya Pradesh has become the **first state** in the country to bring a dedicated Global Capability Centre (GCC) policy.

• GCCs are designed to leverage global talent pools and technological advancements to enhance organizational capabilities and drive business transformation.

3.14.19. BIOTECHNOLOGY INDUSTRY RESEARCH ASSISTANCE COUNCIL (BIRAC)

BIRAC released India Bio-Economy Report 2025 (IBER 2025) and launched BioSaarthi Mentorship Initiative, a global mentorship initiative aimed at nurturing biotech startups.

Biotechnology Industry Research Assistance Council (BIRAC)

About: BIRAC, set up by Department of Biotechnology in 2012, is a Not-for-profit Public Sector Enterprise.

Role: It is an industry-academia interface and implements initiatives such as targeted funding, technology transfer, IP management etc.

Major Initiatives: Bio-NEST Scheme, Biotechnology Ignition Grant (BIG), SEED Fund, LEAP Fund, जन CARE – Amrit Grand Challenge etc.

3.14.20. POTASH

Geological Survey of India (GSI) surveys have identified potash reserves in Rajasthan.

About Potash

• **Definition:** Potash is an impure combination of potassium carbonate & potassium (K) salts.
• **Principal ore:** Sylvinite.
• **Uses of Potash:**
  o **Agriculture: Over 90% of potash** is utilized as fertilizer, making it one of the three primary nutrients in agriculture, alongside nitrogen and phosphorus, collectively known as **N-P-K.**

> The **ideal nutrient ratio** for optimal plant growth is **4:2:1 (N:P: K).**
  o **Purification of water**: Removes hardness of water & has anti-bacterial properties.
  o **Other Uses**: Manufacturing of Glass ceramics, Soaps and detergents, Explosives etc.
- **Common Types of Potash Fertilizers:** Sulphate of Potash (SOP) & Muriate of Potash (MOP).
- **Potash Derived from Molasses:** It is **100% indigenous fertilizer** under the **Nutrient Based Subsidy (NBS) scheme.**
- **Potash classified as Critical Mineral**: Under "The Mines & Minerals (Development and Regulation) Amendment (MMDR) Act, 2023".
- **Deposits**: Rajasthan (89%), Madhya Pradesh (5%) and Uttar Pradesh (4%).
  o India meets **100% of its Potash requirement through imports**.

NBS Scheme (2010)

- A fixed rate of subsidy (Rs. per Kg basis) is announced on nutrients namely **Nitrogen (N)**, **Phosphate (P)**, **Potash (K)** & **Sulphur (S)** by Government on **annual/ bi-annual** basis.
  o Separate subsidies for micronutrients like Boron and Zinc.
- Includes 28 grades of P&K fertilizers such as **Di-Ammonium Phosphate (DAP)**, Mono Ammonium Phosphate (MAP), and Muriate of Potash (MOP).
- Under NBS scheme, The P&K sector is decontrolled; fertilizer companies are allowed to fix **MRP** at reasonable levels which is monitored by the Government.

K POTASSIUM
The role of potassium in crop production

- K increases resistance to diseases and low temperatures
- K is involved in the movement of nutrients through plants
- K is known as the "quality" nutrient
- K increases plant vigour
- K is essential in sugar and starch formation
- K promotes healthy root systems
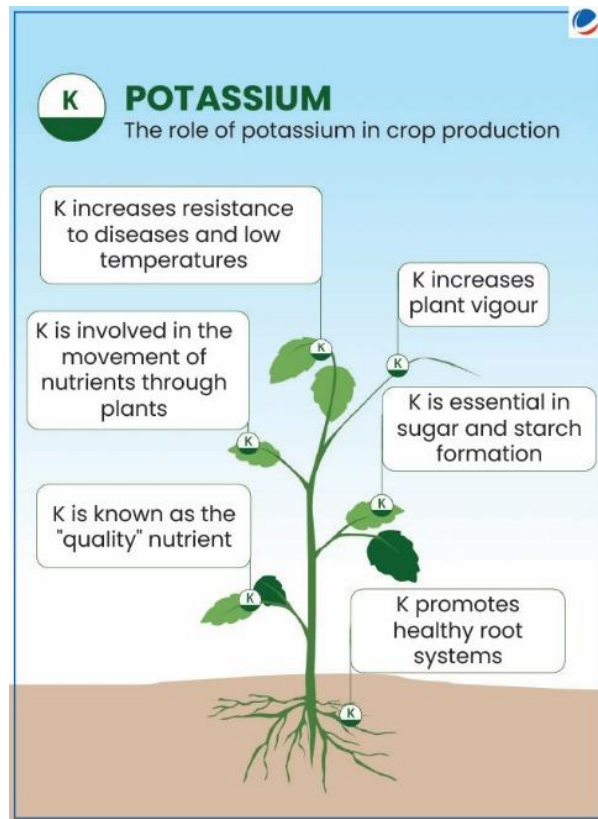
3.14.21. COPPER DEPOSITS

Recently, **India secured a 9,000-sq-km block in Zambia** to explore copper amidst a rising demand of metal in country.

- Listed as **critical mineral in India,** copper is a major industrial metal because of its **high ductility, malleability, thermal and electrical conductivity and resistance to corrosion.**
  o Natural ores of copper are Copper sulfide ore (such as **chalcopyrite)** and copper oxide ore.
  o **Copper ore reserves in India (**Around 164 Mt) are mostly of **low grade.**

Distribution of Copper

- **Top 3 States in India (Reserves):** Rajasthan (52%), Madhya Pradesh (23%) & Jharkhand (15%).
  o **Major mines in India:** Singhbhum Copper Belt (Bihar), Khetri Copper Belt (Rajasthan), Balaghat District (MP), etc.
  o **Top 3 Countries (Producers):** Chile, Democratic Republic of Congo (DRC) and Peru in 2024.

3.14.22. LIQUEFIED NATURAL GAS (LNG)

India's LNG imports from U.S rose by more than 71% Y-o-Y during first eleven months of 2024.

About LNG

- It is created by **transforming natural gas into a liquid state**, by **cooling** it to -162°C (-260°F).
- Since it is **composed primarily of methane** (around 90%), LNG is **odourless, colourless, non-toxic** and **non-corrosive.**

- o LNG produces **40% less CO2 than coal and 30% less than oil**, making it cleanest of fossil fuels.
- India is **fourth-largest LNG importer** globally.
- Government targets to **raise natural gas share in energy mix to 15% by 2030**.

3.14.23. E-SHRAM MICROSITES & OCCUPATIONAL SHORTAGE INDEX (OSI)

Union Minister for Labour & Employment launched the **State and Union Territory Microsites** under the **e-Shram initiative** and the **Occupational Shortage Index (OSI).**

About e-Shram Microsites

- **They are State-specific digital platforms** seamlessly integrated with the **National e-Shram database.**

About OSI

- **Purpose:** Identify workforce demand-supply gaps using ILO methodology and Periodic Labour Force Survey (PLFS) data.
- **Key Functions**: Tracks job shortages in high-demand sectors, Supports workforce planning and skill development etc.

3.14.24. NATIONAL COUNCIL FOR VOCATIONAL EDUCATION AND TRAINING (NCVET)

NCVET has officially recognized the **National Institute of Social Defence (NISD)** as an Awarding Body (Dual Category).

- NISD, is an autonomous body under the **Union Ministry of Social Justice and Empowerment**, is the **nodal training** and **research institute** for social defence.

About NCVET

- **Genesis**: Established in **2018**, the NCVET is the **regulatory body** for the **Technical and Vocational Education and Training (TVET)** sector.
- It was formed by subsuming the functions of erstwhile **National Skill Development Agency (NSDA)** and **National Council for Vocational Training (NCVT).**
- **Ministry**: Ministry of Skill Development & Entrepreneurship (MSDE)
- **Key Functions:**
  - o Setting **standards** and formulating **comprehensive regulations** for the vocational education, training, and skilling ecosystem for improving quality and outcomes.
  - o **Recognize, monitor, discipline and de-recognize** Awarding Bodies (ABs), Assessment Agencies (AAs), and Skill Information Providers.
  - o Approval of qualifications based on the **National Skills Qualification Framework (NSQF)**.

3.14.25. JAIPUR DECLARATION (2025–2035)

12th Regional 3R and Circular Economy Forum in Asia and the Pacific adopted the 'Jaipur Declaration'.

- The circular economy is a model of **production and consumption,** which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products **as long as possible**.

Key Highlights of Jaipur Declaration (2025–2035)

- **Nature: Voluntary** declaration.
- It speaks about **resource efficiency and sustainable material consumption.**
- A **collaborative knowledge platform** as a global alliance **C-3 (Cities Coalition for Circularity)** has also been agreed upon.

PT 365 - Updated Classroom Study Material

3.15. OTHER REPORTS/INDEXES

Report	Released
1. India Gas Market Report	IEA
2. Becoming A High-Income Economy In A Generation' Report	World Bank
3. Jobs at Your Doorsteps	World Bank
4. A World Of Debt Report 2024'	UN Trade and Development (UNCTAD)
5. Trends and Progress of Housing in India 2024 Report	National Housing Bank
6. India's Graduate Skill Index 2025	Mercer-Mettl
7. Fourth Industrial Revolution Network 2023-2024	World Economic Forum
8. Technology and Innovation Report 2025	UNCTAD

3.16. ERRATA

PT 365 Update Part 1

- In **Article 3.4.1 Rupee Depreciation**, it is incorrectly mentioned that India currently follows the floating exchange rate.
- **Correct information**:
  o As per the official documents of the Government of India, since 1993, India has been following **Managed Floating Exchange Rate**, in the sense that there is a currency market and the exchange rate is not visibly administratively determined.
  o However, RBI actively trades on the market, with the stated goal of "containing volatility", and influencing the exchange rate.

4. ENVIRONMENT

4.1. NATIONAL BOARD FOR WILDLIFE (NBWL)

Why in the News?

The Prime Minister of India chaired the 7th National Board for Wildlife meeting at Gir National Park in Gujarat.

More on the News

- During the meeting, the Prime Minister released the report of **the first-ever riverine dolphin estimation**, which estimated a total of **6,327 dolphins.**
- **Prime Minister** announced the initiation of the **16th cycle of lion estimation** to be conducted in 2025 (the last one was done in 2020).

About National Board for Wildlife (NBWL)

- **Genesis:** Advisory Body constituted during 1952 as the **Indian Board for Wildlife (IBWL).**
  - **First Chairman: Sri Jayachamaraja Wadiyar** (Maharaja of Mysore).
- **Members:**
  - **Chairperson:** Prime Minister of India.
  - **Vice-Chairperson:** Union Minister of **Ministry of Environment & Forests and climate change.**
  - **5 persons** to represent non-governmental organisations, nominated by **Central Government.**
  - **10 persons** nominated by the **Central Government** from amongst eminent conservationists, ecologists and environmentalists.
- **Standing Committee:** Constituted for the purpose of **exercising powers** and **performing duties** delegated by the National Board.
  - **Chairman:** Minister of Environment and Forests and Climate Change.
- **Functions of NBWL:**
  - Promote the **conservation and development** of wild life and forests .
  - **Framing policies** and advising Central and State Governments on wildlife conservation.
  - **Recommends** setting up and management of **national parks, sanctuaries** and other **protected areas** and on matters relating to **restriction of activities** in those areas.
  - **Carrying out or causing to be carried** out impact assessment of various projects.

4.2. PROJECT LION AND THE IUCN GREEN STATUS OF SPECIES

Why in the News?

The Union Government approved funds for the **Project Lion to enhance conservation efforts.**

More on the News

- The government also approved the establishment of a **National Referral Centre for Wildlife (NRC-W)** in **Gujarat's Junagadh district.**
  - **NRC-W** aims to **track wildlife diseases**, especially those **transmissible to humans. E.g., the Babesiosis (targets red blood cells in lions)**
  - **Nodal Agency:** Central Zoo Authority
- Also, the **International Union for Conservation of Nature (IUCN)** released the **First Green Status Assessment** for the Lion under the **Green Status of Species (See box).**
  - IUCN has placed lions under the **Largely depleted** category**.**
  - Also, the assessment highlighted that Lions are extinct from **North Africa** and **Southwest Asia**.

PT 365 - Updated Classroom Study Material

IUCN Green Status of Species

It provides a **global standard for measuring species recovery** and **assessing conservation impact**.

- **Key features**
  - **Coverage:** Any species except microorganisms.
  - **Eight Green Status Categories:** Extinct in the Wild, Critically Depleted, Largely Depleted, Moderately Depleted, Slightly Depleted, Fully Recovered, Non-Depleted and Indeterminate.
  - **Complements the Red List:** While the **Red List** focuses on **extinction risk**, **Green Status** adds insight into how species **can recover** and **what conservation actions are required.**
    - There are now **over 100 IUCN Green Status of Species assessments** on the IUCN Red List.
  - **A Green Status of Species assessment is** optional part of **Red List assessments**.
- **How Green Status Defines Species Recovery?**
  - **A species is fully recovered if:**
    - It is present in **all parts of its historical range** (including areas lost due to human impact).
    - It is **viable** (not at risk of extinction) across its range.
    - It **performs its ecological functions** in all parts of its range.

Note: IUCN also releases a **Green List of Protected and Conserved Areas.**

About Project Lion (2020)

- **Objective:** Securing the future of Asiatic lions through comprehensive, long-term conservation efforts.
- **Key Focus Areas:**
  - Landscape **ecology-based conservation**, ensuring sustainable lion habitats.
  - **Habitat restoration** and securing additional areas for lions.
  - **Community participation**, creating livelihood opportunities for local residents.
  - **Disease management**, establishing India as a global hub for big cat health research and treatment.
- **Time Period:** 10 years
- **Implementation:** By the State Government of Gujarat and other stakeholders like the **Central Zoo Authority**.

Gir landscape
- Gir Forest is the **largest compact tract of dry deciduous forests** in the semi-arid western part of India
- **Topography**: made up of successive rugged ridges, isolated hills, plateaus and valleys.
- **Key Rivers**: Hiran, Machhundri, Raval, Shetrunji, Shingoda, etc.
- **Flora**: Teak, Dudhlo, khair, etc.
- **Fauna**: Leopard, Hyena, Chital (Deer), Sambar, etc.
- **Human Settlement**: Maldharis (tribal Community) have survived through the ages by having **symbiotic relationship** with the lion.
  - Their settlements are called "**nesses**".

To know more about Asiatic Lion, refer to Section 9. Species in News in PT365 Environment (April 2024 to October 2024).

4.3. SIMILIPAL TIGER RESERVE

Why in the news?

Odisha Government notified Similipal Tiger Reserve as a National Park making it **largest in Odisha** (earlier Bhitarkanika National Park).

About Similipal Forest

- **Location: Mayurbhanj District** of Odisha in **Chottanagpur region.**

- **Major Rivers:** Burhabalanga, Palpala Bandan, Salandi, Kahairi, and Deo.
- Simlipal is also protected as a **Wildlife Sanctuary**, a **Tiger Reserve** (under Project Tiger), a **Biosphere Reserve** (under **UNESCO's Man and the Biosphere Programme, since 2009)**, and forms part of **Mayurbhanj Elephant Reserve.**
- It is the **107th National Park** and the second in the eastern state, after the Bhitarkanika.
- **Vegetation:** Moist mixed deciduous and tropical semievergreen forest and dry deciduous forest.
- **Animals:** Tigers, including melanistic tigers, fishing cat, barking deer and mouse deer.
- It is the first reserve where the **TrailGuard AI system** has shown success as an 'anti-poaching tool.

What is a National Park?

- **About:** It is an area, whether within a sanctuary or not, **given the highest protection** to conserve its wildlife and environment because of its **ecological, faunal, floral, geomorphological, or zoological importance**.
    - **No human activity is permitted** inside the national park, **except for the ones permitted by the Chief Wildlife Warden of the state**.
    - Also, under the **Forest Rights Act of 2006**, **certain tribal groups are permitted** to live inside the National Parks.
- **Notification**: By the **State Governments** under the **Wildlife Protection Act, 1972.**
    - However, once notified, **no alteration of the boundaries** can be done by the State Government, **except on a recommendation of the National Board for Wildlife.**

4.4. RIVER DOLPHINS

Why in the News?

The first-ever comprehensive survey of river dolphins has revealed a population estimate **of 6,327 dolphins mainly in the Ganga, Brahmaputra and Indus River basins.**

More on the news

- **Conducted by: Wildlife Institute of India** under **Project Dolphin** 2020**.**
- **Name of the report:** 'Population Status of River Dolphins in India- 2024'.

HQ: Dehradun

Wildlife Institute of India (WII)

- **Genesis: 1982, WII** was accorded **autonomy** in April 1986.
- **Ministry:** Ministry of **Environment Forest and Climate Change.**
- **Governance:** Wildlife Institute of India's governance is run under the Society, chaired by the **Union Minister of Environment & Forests.**
- **Mission:** To nurture the development of wildlife science and promote its application in conservation, in consonants with our cultural and socio-economic milieu.
- **Functions:** Training program, academic courses and advisory in wildlife and biodiversity research and management.
- **Important cells:** Environmental Impact Assessment cell, National Wildlife Database, Centre on Environment Information System (ENVIS).

PT 365 - Updated Classroom Study Material

Key findings of the Report

- **Population:** Overall river dolphin population in India is 6327 including Gangetic River dolphins (6324**) and Indus River Dolphins (only 3).**
  - o Uttar Pradesh has **the highest dolphin population at followed by Bihar, West Bengal, Assam Jharkhand, Madhya Pradesh and Rajasthan**. Punjab recorded the lowest, with three dolphins.
- **Indus River Dolphin:** currently **observed in the Beas River, is worryingly low.**
- **Umbrella species:** Dolphins act as **umbrella species, and their conservation has direct impacts on their habitat and biodiversity.**

Indian Initiatives to protect River Dolphins

- **Protected Areas:** Such as **Vikramshila Dolphin Sanctuary, Bihar.**
- **Chambal River Conservation Zone:** Government has designated it as a **Dolphin Conservation Zone**
- **India's first National Dolphin Research Centre (NDRC):** Inaugurated in Patna.
- **Ganges River Dolphin Tagging:** In 2024, India successfully achieved **satellite-tagging the first-ever Ganges River Dolphin in Assam under Project Dolphin.**

To know more about Gangetic River Dolphin, refer to Article 4.6.8. Species in News in PT365 Updated Part 1.

4.5. FOUR MORE WETLANDS INCLUDED UNDER THE RAMSAR CONVENTION

Why in the News?

This has increased wetlands tally from 85 to **89**, highest in **Asia**, **third globally**.

More on the News

* **Tamil Nadu** leads with **20 Ramsar sites**, the highest among Indian states.
* **Sikkim** and **Jharkhand** have added their first Ramsar sites.

New Ramsar Sites

Khecheopalri Wetland (Sikkim)
* Also Known as **Wishing Lake**, believed to fulfill wishes; locally called **Sho Dzo Sho ("Oh Lady, Sit Here")**.
* Originally Kha-Chot-Palri, meaning **"Heaven of Padmasambhava"**.
* Cirque-type wetland, considered sacred by **Buddhists** and **Hindus.**

Udhwa Lake (Jharkhand)
* Named after **Saint Uddhava** from **Mahabharata**, a friend of **Lord Krishna.**
* Declared as **Wildlife Sanctuary** and **Important Bird Area (IBA).**
* Sanctuary has two water bodies i.e. **Patauran** and **Berhale.**
* Home to bird species like **House Swifts, Fishing Eagles,** and **Brahminy Kite.**

Therthangal Bird Sanctuary (Tamil Nadu)
* **Location:** Near **Gulf of Mannar,** on the Central Asian Flyway.
* Home to species like **Painted Stork, Black-headed Ibis, Spot-billed Pelican, etc.**
* Notable for the **Babul (Acacia nilotica) trees.**

Sakkarakottai Bird Sanctuary (Tamil Nadu)
* **Location:** Near **Gulf of Mannar,** on **Central Asian Flyway.**
* **Historical Significance:** Sakkarakottai Tank was dug in **1321 A.D.** through **Kudimaramattu** (community participation).
* Hosts species like **Painted Stork, Black-headed Ibis, etc.**

To know more about Ramsar convention, refer to Article 1.3.3. Ramsar Sites in PT365 Environment (April 2024 to October 2024).

4.6. BIOFUELS

Why in the News?

India has emerged as the world's third-largest biofuel producer.

About Biofuels

- Biofuels are fuels produced from **renewable resources** and used in place of or blended with diesel, petrol, or other fossil fuels for transport, stationary, portable, and other applications.
- **Types:** Categorised into **four generations** (refer to infographic).
- **Key Players:** The USA is the largest producer followed by Brazil.
- It includes **ethanol and biodiesel blending, Compressed Biogas (CBG), Sustainable Aviation Fuels (SAF), etc.**
- **Significance of Biofuels:**
  - **Can reduce well-to-wheel emissions by up to 80%** compared to their fossil fuel counterparts.
  - **Renewable methanol** can be used to produce a wide range of polymers, fuels and has widespread industrial applications.
  - **Others:** Energy Security; Circular Economy/Waste Management; Fostering Rural Economy by the development of the market for agricultural residues/wastes.

Evolution of Biofuels: From First to Fourth Generation

Second-generation biofuels
Organic waste-derived fuels

Fourth-generation biofuels
Genetically modified microorganisms

First-generation biofuels
Fuels from food crops

Third-generation biofuels
Algae-based fuels
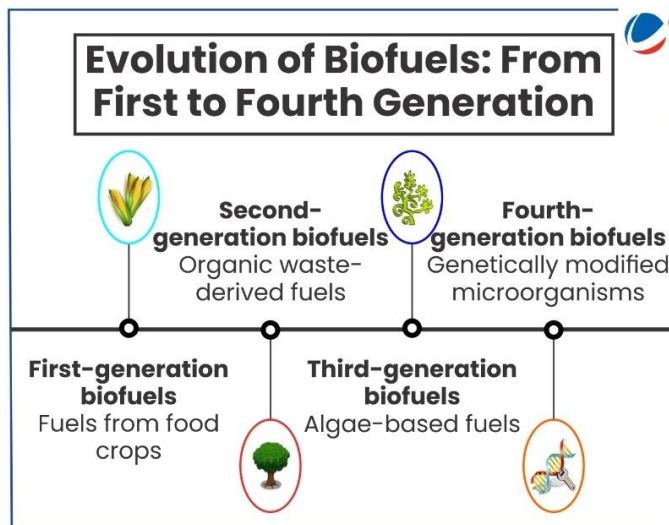
Key Initiatives/Steps which Promoted Production of Biofuels

Policy and Roadmap Initiatives

- **National Policy on Biofuels (2018, amended in 2022):** Expanded the feedstock base for biofuels, allowing sugarcane juice, damaged grains, and agricultural waste.
  - Also, introduced incentives for second-generation (2G) biofuels.
- **Ethanol Blended Petrol (EBP) Programme:** India has achieved 19.6% ethanol blending in petrol (as of January 2025) and is on track to reach 20% a target by 2025 ahead of its original 2030 target.
  - Recently Union Cabinet approved the revision of Ethanol Procurement Price for **Public Sector Oil Marketing Companies (OMCs) under EBP.**

Infrastructure & Production Support

- **Pradhan Mantri JI-VAN Yojana (2019)**: Promotes latest advancements in 2G ethanol capacity.
- **GOBAR-Dhan (Galvanizing Organic Bio-Agro Resources) Scheme**: Promotes biogas and **compressed biogas (CBG)** from agricultural waste and animal dung.
- **Sustainable Alternative Towards Affordable Transportation (SATAT) Initiative (2018)**: To extract economic value from bio-mass waste in the form of Compressed Bio Gas (CBG) and bio-manure.

International Collaborations

- **Global Biofuels Alliance (2023):** India-led initiative to promote biofuel production and technology exchange.
- **Bilateral Mechanism:** India and Brazil have launched a Center of Excellence on Ethanol.
  - Technical exchange initiatives are improving the production efficiency of sugarcane/molasses ethanol.

Other

- Reduction of GST rate for procurement of biodiesel for blending programme from 12% to 5%.
- Roll out of E20 fuels, ETHANOL 100, etc.

4.7. KOSI MECHI INTRA-STATE LINK PROJECT

Why in the News?

The Project, **under Pradhan Mantri Krishi Sinchai Yojana- Accelerated Irrigation Benefits Programme** (PMKSY-AIBP), will be completed by 2029, **aiding irrigation and flood management in Bihar.**

Kosi Mechi Intra-State Link Project

- It envisages diversion of part of surplus water **of Kosi River to Mahananda basin in Bihar by linking it to Mechi river.**
- This will be done by remodelling and extension of the **existing Eastern Kosi Main Canal (EKMC).**
- EKMC is a part of the Kosi Project (1954) between India and Nepal to **overcome the problem of shifting of course of the Kosi River.**

About Kosi and Mechi River

- Kosi River is a transboundary river originating from Tibet,flowing through Nepal in Himalayan Mountains and Bihar in the lower plains and merges into the River Ganga.
- **Major tributaries of Kosi:** Sun Kosi, Arun Kosi and Tamur Kosi.
- River Mechi is a perennial river, **lying to the east of Kosi, and is a tributary of river Mahananda.**

About PMKSY

- PMKSY is an **umbrella scheme launched in 2015-16.**
- **Aim:** To enhance physical access of water on farm, expand cultivable area under irrigation, improve on-farm water use efficiency, introduce sustainable water conservation practices, etc.
- **Major Components:**
  - **Accelerated Irrigation Benefit Programme (AIBP**) and Har Khet Ko Pani (HKKP) being implemented by Ministry of Jal Shakti.
  - **Watershed Development (WD)** being implemented by Ministry of Rural Development.
- **PMKSY- AIBP**
  - AIBP was launched in 1996-97 and **amalgamated in PMKSY in 2015-16.**
  - **Aim:** Provision of Central Assistance to major and medium irrigation projects under the **Long Term Irrigation Fund, with borrowings from NABARD.**

4.8. DRAFT RULES FOR 'ONE NATION, ONE TIME'

Why in The News?

Department of Consumer Affairs notifies **Draft Legal Metrology (Indian Standard Time) Rules, 2025** which aim to **standardize and mandate use of Indian Standard Time (IST)** across all sectors in India.

About Draft Legal Metrology (Indian Standard Time) Rules, 2025

- **Mandatory time reference: Would be IST** across all sectors, including commerce, transport, public administration, legal contracts, and financial operations.
- **Prohibition:** No person/entity shall use, display, or record time other than IST for official/commercial purposes.
  - Provided that any law/government direction/guidelines permits same.
- **Adoption of Time Synchronization Protocols:** Such as Network Time Protocol and Precision Time Protocol etc. by government offices is required.
- **Cybersecurity:** To ensure resilience, **cybersecurity measures and alternative reference mechanisms** are prescribed.
- **Authorized Deviations:** Use of alternative timescales (GMT, etc.) is permitted for specific purposes e.g. astronomy, navigation, scientific research, etc. subject to prior permission.

PT 365 - Updated Classroom Study Material

About IST

- **Central meridian** of country (i.e**. 82°30'E meridian** passing through Mirzapur) is taken as Standard Meridian or **IST (Maintained by CSIR-NPL).**
- It is **5 hours 30 minutes** ahead of **Greenwich Mean Time (GMT) (**now Universal Coordinated Time (UTC)).
  - Local time at Prime Meridian (0° longitude) is **known as GMT.**
- Several tea gardens in Assam follow an informal '**Chaibagan' or 'Bagan time**' ('Tea Garden Time'), which is **one hour ahead of IST.**

4.9. SAGAING FAULT

Why in the News?

The earthquake occured in Myanmar due to **"strike-slip faulting" (Sagaing fault).**

About the Sagaing Fault

- **Location:** Runs from north to south through Myanmar, **and marks the boundary between Indian and Eurasian plates.**
- **Feature:** It's one of the longest and most **active strike-slip faults globally, spanning 1,500 km.**
- **Tectonic Movement**: Indian plate is moving northward **compared to Eurasian plate, causing stress along fault.**

About Fault

- **Definition:** Faults are fractures in the Earth's crust where rocks **move relative to each other, caused by tectonic stress.**
- The movement along these fault planes releases **accumulated strain, leading to earthquakes**.
- **The primary types of faults are:**
  - **Normal Fault:** The hanging wall moves downward relative to the footwall, **common at divergent boundaries. E.g., East African Rift Valley and the Basin**
  - **Reverse Fault:** The hanging wall moves upward, occurring at convergent boundaries **due to compression. E.g., the Rocky Mountains and the Himalayan Mountains.**
  - **Strike-Slip Fault:** Horizontal movement, minimal vertical displacement**. E.g., Anatolia Fault, Turkey.**
  - **Transform Fault:** A type of strike-slip fault, forming boundaries between **tectonic plates. E.g., San Andreas Fault, California.**

> **Related News: Soil liquefaction**
>
> India's National Centre for Seismology **says soil liquefaction caused severe damage in Myanmar.**
>
> **About Soil Liquefaction**
>
> - It is a phenomenon where a block of **soil behaves as a liquid instead of a solid.**
> - Liquefaction takes place when loosely packed, water-logged sediments at **or near the ground surface lose their strength in response to strong ground shaking.**
> - Liquefaction occurring beneath buildings and other structures can **cause major damage during earthquakes.**

4.10. OTHER IMPORTANT DEVELOPMENTS/NEWS

4.10.1. NET-ZERO FRAMEWORK FOR GLOBAL SHIPPING

International Maritime Organisation (IMO) Approves Net-Zero Framework for Global Shipping.

Key Features of the Framework

- It is the first in the world to combine mandatory emissions limits and GHG pricing across an entire **industry sector.**

- o Shipping sector accounts for **almost 3% of global greenhouse gas emissions.**
- It will be included in **Annex VI (Prevention of air pollution from ships) to the International Convention for the Prevention of Pollution from Ships (MARPOL).**
- **Aim:** Net-zero emissions by or around, i.e. close to 2050, Ships will be required to comply with:
  - o **Global Fuel Standard**
  - o **Global Economic Measure**
- **IMO Net-Zero Fund**: It will be established to collect pricing contributions from emissions.
- **Implementation:** Set to be formally adopted in October 2025 before entry into force in 2027.
  - o Once into force, it will become mandatory for large ocean-going ships over 5,000 gross tonnage, which emit 85% of the total CO_2 emissions from international shipping.

4.10.2. BATECHOMON

BatEchoMon, short for Bat Echolocation Monitoring, is **India's first automated bat monitoring system developed at the Indian Institute for Human Settlements (IIHS), Bengaluru.**

About BatEchoMon

- It is an autonomous system **capable of detecting and analysing bat** calls in real-time.
- It can convert the **ultrasonic echolocation calls of insectivorous bats into audible sounds** for humans.

4.10.3. CHAMPIONS OF ANIMAL PROTECTION

Animal Welfare Board of India (AWBI) will honor **Champions of Animal Protection** under two major categories **Prani Mitra and Jeev Daya Award.**

About AWBI

- **The Prevention of Cruelty to Animal Act (PCAA) 1960** established the AWBI in 1962 **as a statutory advisory body** on Animal Welfare Laws and promotes animal welfare.
- It was **started under the stewardship of Rukmini Devi Arundale**, well known humanitarian.
- It **consists of 28 Members including 6 Members of Parliament** (2 from Rajya Sabha and 4 from Lok Sabha).

4.10.4. BAKU TO BELEM ROADMAP

India urges BRICS nations to unite on 'Baku to Belem Roadmap' to mobilize USD 1.3 trillion in **climate finance annually by 2035 to support Nationally Determined Contributions (NDCs).**

Baku to Belem Roadmap

- UNFCCC COP29, held in Baku (Azerbaijan), **agreed on a new global finance goal and a framework for raising ambition for climate finance in run-up to COP30 in Belém (Brazil).**
- It aims at scaling up climate finance to **developing country parties to support low greenhouse gas emissions and climate-resilient development pathways** and implement NDCs.

4.10.5. REVISED CLASSIFICATION OF INDUSTRIES

In the new classification, Central Pollution Control Board (CPCB) has classified a total of 419 **sectors into Red, Orange, Green, White and Blue categories.**

Key Features of the New Classification

- CPCB has followed a revised methodology based on the **Pollution Index (formulated in 2016 to harmonize criteria for classification of Industries) by assigning equal weightage** to scores arising due to Water, Air and Hazardous waste.
- **Blue category**: Under Essential Environmental Services for management of waste generated from domestic/household activities.
  - o **Essential Environmental Services** are those facilities which are essential to control, abate and mitigate pollution generated from **Domestic and Industrial activities.**
- **Changes in Classification of Compressed Biogas Plants (CBP)**

- o CBG plants based on various feedstock like municipal solid waste, agro-residue, energy crops/grass/weeds, etc. having **littering potential may be considered under blue category.**
- o CBG plants based on industrial or process **waste will continue to be in red category.**

To know more about Categorization of industrial sectors, refer to Article 3.6.1. White Category Industries in PT365 Environment (April 2024 to October 2024).

4.10.6. RESEARCH PROJECTS LAUNCHED FOR HIMALAYAN ECOSYSTEM

Ministry of Earth Sciences launched "ICE-CRUNCH" and also inaugurated India's first High- Altitude Climate Research Station.

About High Altitude Climate Research Station

- **ICE-CRUNCH** (Ice nucleating particles and cloud condensation nuclei properties in the North-Western Himalayas)" is collaborative study between scientists of India and Switzerland,
- **Location:** Nathatop, Jammu and Kashmir
- **Objective:** Climate research, capacity building, training of young scientists, and development of climate modelling capabilities.
- **Key Role:** It will serve as a long-term research hub affiliated with the World Meteorological Organization's (WMO) Global Atmospheric Watch (GAW) Programme.

4.10.7. C40 CITIES

C40 Cities & **UN-Habitat** have announced a landmark partnership to transform urban planning.

About C40

- C40 is a **global network of nearly 100 mayors of world's leading cities** that are united in action to confront climate crisis.
- Six Indian cities are currently members of C40: **Bengaluru; Chennai; Delhi NCT; Jaipur; Kolkata and Mumbai**.

4.10.8. COALITION FOR ENVIRONMENTALLY SUSTAINABLE AI

Recently, many countries, tech companies, and international organizations have partnered to establish **Coalition for Environmentally Sustainable AI.**

About the Coalition

- **Overview**: A global initiative with **100+ partners**, including **37 tech companies, 11 countries, and 5 international organizations**, to promote AI's environmental sustainability.
- **Leadership**: Led by **France, UNEP,** and **ITU**.
- **Announcement**: Launched at the **AI Action Summit in Paris**.
- **Objectives**:
  - o Use AI for **decarbonization, pollution reduction, biodiversity preservation,** and **ocean protection**.
  - o Establish **standardized metrics, life cycle analysis frameworks**, and sustainable AI research.
  - o Foster collaboration among **governments, academia, civil society,** and **private sector**.

4.10.9. SVALBARD GLOBAL SEED VAULT

The Svalbard Global Seed Vault (also known as the Arctic doomsday seed vault) gets more than 14,000 new samples.

About Svalbard Global Seed Vault

- **Location:** Spitsbergen, the largest of the Svalbard islands (Arctic Ocean), Norway.
- **Ownership and Management:** owned by Norway and managed in partnership between the Norwegian Ministry of Agriculture and Food, regional genebank NordGen and Crop Trust.
- **Significance:** Safe, free and long-term storage of seed duplicates from all genebanks, serve as a backup in case of nuclear war, human conflict, climate change, etc.

4.10.10. AMMONIA POLLUTION

Recently, Yamuna board stated that ammonia problem occurs every year and there are no convergent solutions by states

Ammonia Pollution in water

- According to the **Bureau of Indian Standards**, the acceptable **maximum limit of ammonia in drinking water is 0.5 ppm.**
- **Causes:** Intensive rearing of farm animals, can also arise from cement mortar pipe linings, discharge of untreated sewag, etc.
- Ammonia in water is an **indicator of possible bacterial, sewage and animal waste pollution**.
- **Health risk:** Affecting the respiratory system through irritation of the eyes, nose, and throat etc.

4.10.11. NATIONAL DISASTER MITIGATION FUND (NDMF)

A High-Level Committee (HLC) under the chairmanship of the Union Home Minister has recently **approved ₹ 3027.86 crore for three disasters from the National Disaster Mitigation Fund (NDMF).**

National Disaster Mitigation Fund (NDMF)

- **Established: In February 2021** by the Union Government on recommendations of the 15th Finance Commission.
- **It forms the part of National Disaster Risk Management Fund (NDRMF)** comprising all the funds available for disaster management in India including the National Disaster Response Fund.
- At the state level, all states (except Telangana) have initiated the setting up of the **State Disaster Mitigation Fund (SDMF).**
- **Central Government contributes 75% for all States** (90% for North-Eastern and Himalayan States) as Centre's share in SDMF.

4.11. TERMS/CONCEPTS IN NEWS

4.11.1. GREEN GRABBING

Asian Development Bank-funded **Assam Solar Park is opposed by local communities for 'Green Grabbing' indigenous land.**

About Green Grabbing

- It is the appropriation of land and resources in the name **of environmental goals and has emerged as an issue of rising concern.**
- Green grabs occur when land is repurposed for projects like **carbon offsetting, biodiversity reserves, afforestation, or clean energy production.**

4.11.2. PETRIFICATION

A first-of-its-kind discovery of a **petrified wood fossil** has been made at **Rajmahal hills** in Pakur, **Jharkhand**.

About Petrification (or Petrifaction)

- It is a process of **permineralization** when the **organic matter is completely replaced by minerals** and the fossil is turned to **stone**.
  - **Permineralization** is a **type of fossil** where **pores of the plant materials, bones, and shells** are **impregnated by mineral matter** from the ground, lakes, or ocean.
- It **reproduces the original tissue** in every detail.
- This kind of fossilization occurs in **both hard and soft tissues.**

4.11.3. MESOSCALE CONVECTIVE SYSTEM

Study focused on **Mesoscale Convective Systems (MCS)** found Soil moisture may help forecast intense storms.

About MCS

- It is a **collection of thunderstorms that act as a system**. An MCS can spread across an entire state and last more than 12 hours.
- These systems often bring intense rainfall, causing widespread damage to lives, livestock and infrastructure.
- **Hotspots for MCSs:** West and Central Africa, northern India, Argentina, China and the United States Great Plains.

4.11.4. STRATOVOLCANO

In a rare event, **massive methane plumes** emitted from volcano **Mount Fentale (Ethiopia),** it is a **stratovolcano that** last erupted in **1820**.

About Stratovolcano

- **A stratovolcano** is a large, steep-sided volcano built up by alternating layers of lava flows and volcanic ash, often associated with explosive eruptions.
- E.g., Mount Fuji (Japan), Mount Vesuvius (Italy), Mount Etna (Italy), Mount Rainier (USA), Krakatoa (Indonesia), etc.

About Methane Plumes

- **It's the release of large quantities of methane** from **super-emitter sites** like gas drilling sites.
- Methane is a **potent greenhouse gas**, with **80 times** the **Global Warming Potential (GWP)** of carbon dioxide over 20 years.

4.12. ORGANIZATION IN NEWS

4.12.1. GEOLOGICAL SURVEY OF INDIA

HQ: Kolkata.

Geological Survey of India

Context: The Geological Survey of India (GSI) is **celebrating its 175th Foundation Day.**

Background: Initially established to **locate coal deposits for the Railways**, its **core functions** include creation and regular updation of **national geoscientific information** and **mineral resource assessment.**

Genesis: Conceived **by John McClelland** who initiated the appointment of **David Hiraw Williams** as the Geological Surveyor in **1846** by the **East India Company.**

- Appointment of **Thomas Oldham** as **Geological Surveyor in 1851** marked the beginning of its functioning.
- **Second oldest survey body** in India after **Survey of India (founded in 1767).**
- **First Indian Head:** Dr. M. S. Krishnan.

6 Regional offices: Lucknow, Jaipur, Nagpur, Hyderabad, Shillong and Kolkata.

Nodal Ministry: Attached office to the **Ministry of Mines.**

Five Missions:
- **Mission-I** (Ground, Aerial and Marine Surveys),
- **Mission-II** (Natural Resource Assessments & Augmentation of Minerals, Coal & Lignite),
- **Mission-III** (Information dissemination),
- **Mission- IV** (Fundamental and Multi-disciplinary Geoscience Research) and
- **Mission-V** (Training and Capacity Building).

4.12.2. BAY OF BENGAL INTER-GOVERNMENTAL ORGANISATION

Bay of Bengal Inter-Governmental Organisation (BOBP-IGO)

Context: India Assumes Chairmanship of **BOBP-IGO.**

Genesis: 2003

Purpose: It is an Inter-Governmental Organisation promoting cooperation and providing technical advisory for sustainable coastal fisheries in the Bay of Bengal region.

Members: Bangladesh, **India,** Maldives and Sri Lanka.
◆ Indonesia, Malaysia, Myanmar and Thailand are cooperating non-contracting parties.

Bay of Bengal Large Marine Ecosystem Project II:
◆ **Purpose:** Addresses issues related to the overexploitation of marine living resources, the degradation and loss of critical habitats and water pollution.
◆ **Tenure:** Five-year project (2023-2028) with funding from the **Global Environment Facility (GEF).**

4.13. REPORT/INDICES IN NEWS

Name	Observations
Climate Risk Index (CRI) 2025	**Published by: Germanwatch** (since **2006**) and India is ranked the **6th most affected country** during **1993-2022 in the CRI 2025.** **About CRI** • It is a **backwards-looking index** ranking the **human and economic toll of extreme weather** with the **most affected country ranked highest.**
Electricity 2025 Report	**Published by:** International Energy Agency (IEA) **Key Highlights of Report** • **Global energy demand rose by 4.3% in 2024** and forecast to continue to grow at close to 4% out to 2027. • China emerged as **highest consumer of electricity** leaving behind US or EU. • **Coal remains dominant** with **74%** of India's power mix in 2024 in India.

4.14. UPDATES

4.14.1. INTERNATIONAL BIG CAT ALLIANCE (IBCA)

The IBCA officially comes into force as a **full-fledged treaty-based intergovernmental international organisation** and **international legal entity**.

4.14.2. SOLAR ENERGY IN INDIA

India has achieved a historic milestone by surpassing **100 GW of installed solar power capacity.**

4.14.3. OFFSET METHODOLOGIES

Bureau of Energy Efficiency (BEE) releases offset methodologies for suggestions.

More on the News

• A list of **10 sectors** was approved for the **Offset Mechanism** under the **Carbon Credits Trading Scheme (CCTS).**
• Out of these, **six sectors belong to Phase 1,** for which 12 methodologies have been developed.

- The methodologies have been adapted from the existing **UNFCCC Clean Development Mechanism (CDM) methodologies.**
  - o Under the CDM, emission-reduction projects in developing countries can earn **certified emission reduction credits.**
  - o **Industrialized countries can use these saleable credits** to meet a part of their emission reduction targets under **the Kyoto Protocol.**

4.15. PLACES IN NEWS

4.15.1. WORLD

4.15.1.1. GEOGRAPHICAL FEATURES

Zagros Mountains
‣ Hilly area surrounding **Zagros Mountains in Iraq** is being pulled into Earth (Study)
  - o Runs in **Northwest to southeast direction** from border between eastern **Turkey** and **northern Iraq** to **Strait of Hormuz (Iran).**

Mount Dukono
‣ A volcano erupted at **Mount Dukono** (active volcano) in **Halmahera Island, Indonesia.**

Nankai Trough
‣ Japan warned of potential **"megaquake"** (megathrust earthquake with magnitude ≥ 8).
  - o Located in the **Subduction zone** between **Philippine Sea Plate** and **Eurasian Plate** off the **Japan's southwest** Pacific coast.

Mount Taranaki (Mount Egmont)
‣ Recognized as a legal person by New Zealand.
  - o **Stratovolcano** located in **Egmont National Park.**
  - o Sacred & an ancestor of the **local Māori people**

Andes Mountains
‣ Shrinking Andean glaciers threatens **water supply in South America (Study).**
  - o **Fold Mountains** spanning **seven South American countries** Venezuela, Colombia, Ecuador, Peru, Bolivia, Chile and Argentina.
  - o Contains Volcanoes, **Ojos del Salado** (Dormant), **Cotapaxi Volcano** (Active).

Atacama Desert
‣ **Light pollution** threatens the world's largest telescope located here.
  - o Lies between the **Andes Mountains and Pacific Ocean.**
  - o **One of the driest places** (due to **Humboldt Current** [cold ocean current]).
  - o **Supports astronomical observations** due to clear skies.

4.15.1.2. WATER BODIES

Gulf of Aqaba (Gulf of Eilat)
‣ **Study uncovered significant pause in coral reef growth** here during the late Holocene period.
  ○ Part of **East African Rift system** located between **Arabia peninsula & Sinai** Peninsula.
    ○ **Tiran Strait** connects it with **Red Sea.**
  ○ **Bordering countries:** Israel, Jordan, Egypt & Saudi Arabia.
  ○ **NEOM Brine Pools** (salty underwater lakes) discovered here.

Caspian Sea
‣ Concerns raised over its rapidly **declining water levels**
  ○ **Largest enclosed water body** in the world.
  ○ **Bordered by five countries:** Kazakhstan (longest coastline), Azerbaijan, Russia, Turkmenistan, and Iran.

Great Lakes
‣ Climate change is threatening **Lake Ontario,** part of the 5 North America's great lakes.
  ○ **Great Lakes: Superior** (largest and deepest), **Michigan, Huron** (longest shoreline), **Erie** (Shallowest), and **Ontario** (Smallest).
    ○ Form the **largest freshwater system on Earth.**
  ○ **Lake Michigan** lies **completely within the USA.** Others form a **natural border between Canada** and the **USA.**

Lake Kivu
‣ **Lake Kivu** displayed devastation and misery due to armed conflict, **Democratic Republic of Congo (DRC).**
  ○ Situated **between Rwanda** and the **Democratic Republic of Congo.**
  ○ Lies in the **Albertine Rift** and is of **Volcanic origin.**
  ○ Empties Into **Ruzizi River** flowing into **Lake Tanganyika.**

PT 365 - Updated Classroom Study Material

4.15.2. INDIA

Gorakhpur, Haryana
- North India's **first nuclear power project,** consisting of **two twin units each with a Pressurized Heavy Water Reactor** with total capacity of **2800 MW** will be established here.

Dholera, Gujarat
- Fiscal Support Agreement signed for **India's first commercial semiconductor fab** in Dholera, Gujarat.

Teesta River
- **Union Environment Ministry** approved rebuilding the **Teesta-III dam** on the main **Teesta River,** despite design and stability concerns.
  - Right bank tributary of **Brahmaputra,** originates at **Tso Lhamo Lake** in Sikkim.
  - Flows through **India (West Bengal and Sikkim)** and **Bangladesh.**
  - **Tributary: Rangit.**

Palar River
- Supreme Court (SC) Issues Directions to Curb Tanneries' Pollution in Palar River.
  - **Origin:** Rises near the **Ponnaiyar River** in **Karnataka.**
  - **Flows:** Through **Tamil Nadu to Bay of Bengal.**
  - **Major tributaries: Ponnai** and **Cheyyar** rivers.

Pamban Bridge
- The new **Pamban Bridge in Tamil Nadu, marking the opening of India's first vertical lift railway sea bridge,** was inaugurated.
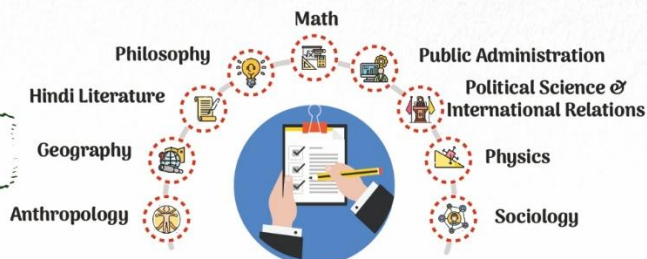
4.15.3. COUNTRIES IN NEWS

Malaysia (Capital: Kuala Lumpur)
A gas pipeline got burst in Putra Heights in **central Selangor state, Malaysia injuring many people.**

Greece (Capital: Athens)
Spate of Earthquakes have recently occurred in Greece's island of Santorini.

Honduras (Capital: Tegucigalpa)
India has sent humanitarian assistance to **Honduras** in the aftermath of **Tropical storm SARA.**

Kazakhstan (Capital: Astana)
Kazakhstan discovered its largest deposit of rare earth elements in Central Kazakhstan's Karaganda region.
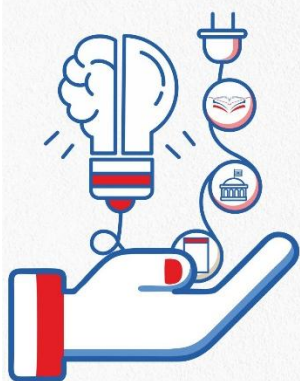
4.16. PROTECTED AREAS IN NEWS

Protected areas in News

PT 365 - Updated Classroom Study Material

Kuno National
Park (NP)

Parvati Arga
Bird Sanctuary

Namdhapa Tiger
Reserve (TR)

Dibru Saikhowa
National Park (NP)

Bhitarkanika National
Park (BNP)

Brahmagiri Wildlife
Sanctuary (WLS)

Mathikettan Shola
National Park (NP)

Anamudi Shola
National Park (NP)

Shendurney Wildlife
Sanctuary
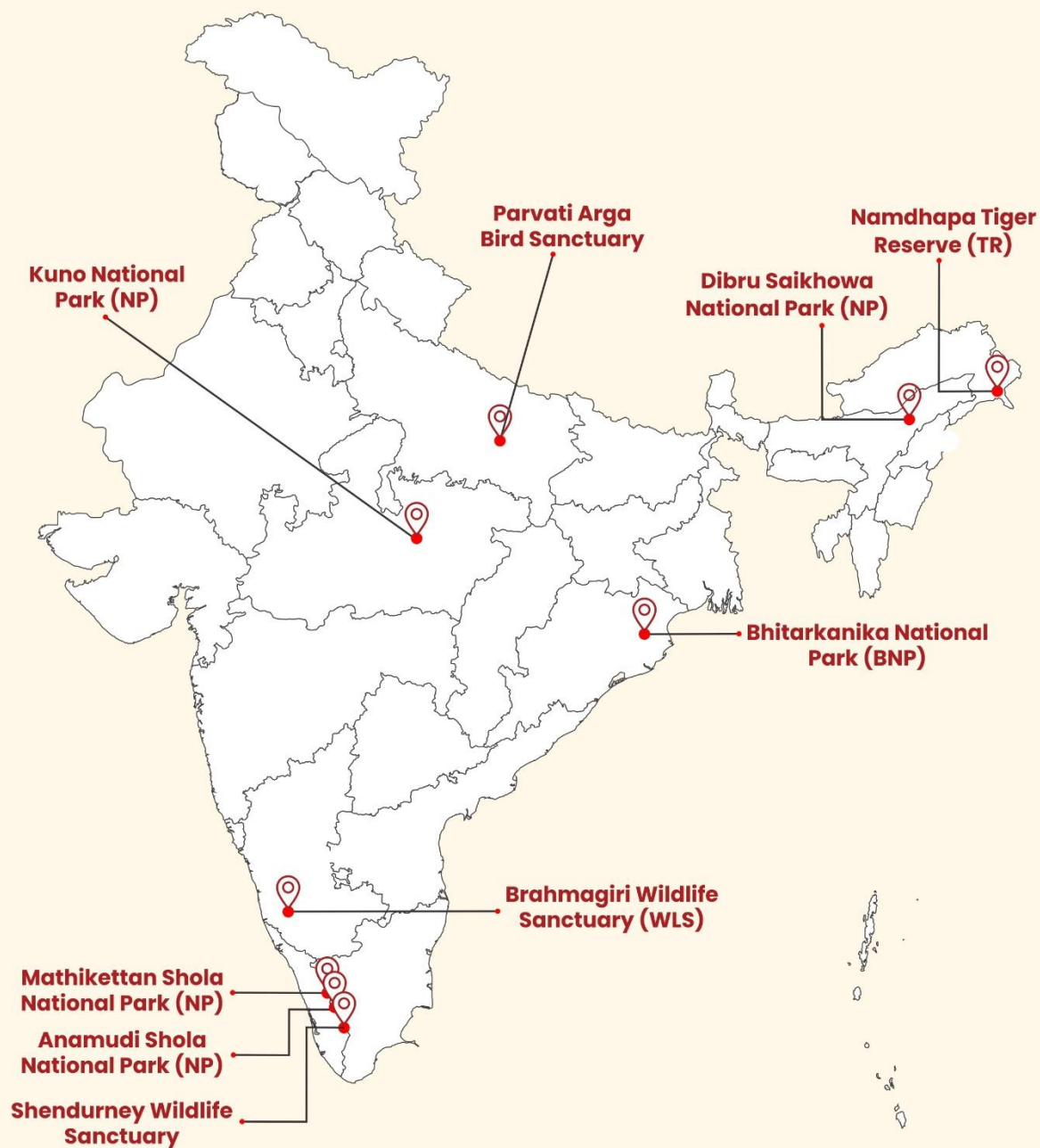
Assam

Dibru Saikhowa National Park (NP)

- Union Environment Ministry's **Forest Advisory Committee** approved the R&D proposal for **Dibru Saikhowa National Park.**

About Dibru Saikhowa National Park

- **Location:** Assam, it is both a National Park and a Biosphere Reserve.
- **Rivers**: **Brahmaputra and Lohit Rivers** (North), **Dibru River** (South).
- **Vegetation**: Moist mixed **semi-evergreen and deciduous forests**, with the **largest salix swamp forest** in northeastern India.
- **Fauna**: Ferral horses, tigers, elephants, leopards, and jungle cats.

Arunachal Pradesh

Namdhapa Tiger Reserve (TR)

- An elephant has been spotted in **Namdhapa Tiger Reserve** after over decade conservation hopes.

About Namdhapa Tiger Reserve

- **Location:** India's **easternmost tiger reserve** in **Changlang District**, Arunachal Pradesh).
- **River: Namdapha River**
- **Vegetation:** Evergreen Forests, Moist deciduous forests, sub-tropical forests, Temperate Forests and Alpine.
- **Fauna: Only reserve in India** to host all four big cats—**tiger, leopard, clouded leopard, and snow leopard**.
- **Flora:** Pinus merkusi and Abies delavavi (Exclusive to this), Mishimi Teeta (Copti teeta).

Karnataka

Brahmagiri Wildlife Sanctuary (WLS)

- State government's move to build a village for tribals in the buffer zone of **Brahmagiri Wildlife Sanctuary** raised objections.

About Brahmagiri Wildlife Sanctuary

- **Location: Core of Western Ghats in Kodagu district (Karnataka).**
  - Derives its name from **Brahmagiri Peak**, its highest point.
- **Vegetation:** Evergreen and semi-evergreen forests interspersed with **shola grassland.**
- **Fauna:** Leopard, Gaur or Indian Bison, Barking deer, Lion Tailed Macaque, Nilgiri Langur etc.

PT 365 - Updated Classroom Study Material

PT 365 - Updated Classroom Study Material

Mathikettan Shola National Park (NP)

Anamudi Shola National Park (NP)

Shendurney Wildlife Sanctuary
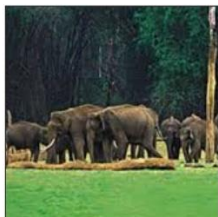
Kerala

- Golden-headed Cisticola (least concerned) found in **Mathikettan Shola National Park (Shola National Park)**

Mathikettan Shola National Park

- **Location:** Idukki, Kerala.
- **Declared as National Park:** 2003 for its unique shola forest and elephant corridor.
- **Vegetation:** Evergreen forests, moist deciduous forests, shola grasslands.
  - ▸ **Shola grasslands:** Unique high-altitude ecosystems found in the Western Ghats, characterized by a mix of stunted forests (sholas) and grasslands.
- **Biodiversity: Lion-tailed macaque, an endemic and threatened species;** Gaur, wild boar, sambar, langur, etc.
- **Water Sources:** Uchillkuthi Puzha, Mathikettan Puzha, Njandar (tributaries of Panniyar).
- **Cultural Significance:** Muthavan tribal colony at Aduvilanthankudy.

- **Kerala** has secured approval from the National Board of Wildlife to erect a check dam across the **Silandhi river** using forest land **from Anamudi Shola National Park.**
  - ▸ **Silandhi river,** is a tributary of the **Amaravathy river** feeds the **Cauvery river.**

About Anamudi Shola National Park

- **Location: Western Ghats (Idukki District Kerala)**
- **Surrounded by: Eravikulam National park, Pampadum Shola National park, Chinnar Wildlife Sanctuary** and **Mathikettan Shola Park.**
- **Tallest peak: Anamudi** (2,695 m)
- **Flora:** Southern subtropical hill forests, southern montane wet temperate forests and moist deciduous forests.
- **Fauna:** Elephant, Tiger, Panther, Indian Bison, Nilgiri tahr, Gaur, Spotted Deer, Sambar, etc.

- A collaborative research has reported the discovery of **two new species of jumping spiders** from the **Shendurney Wildlife Sanctuary (Kerala) in Western Ghats**.

About Shendurney Wildlife Sanctuary

- **Name:** The name "Shendurney" owes its name to a tree, locally called "**Chenkurinji**" an endemic tree.
- **Location:** Located in **Kollam District** of Kerala and forms **part of Agasthyamala Biosphere Reserve.**
- **Vegetation:** Tropical evergreen, semi-evergreen, and moist deciduous forests.

- **Fauna:** Elephants, Tigers, Leopards, Gaurs (Indian Bison), Sambar Deer, Bonnet Macaques, Nilgiri Langurs, and Lion-tailed Macaques.
- **Unique Ecosystem: Myristica Swamps** (unique freshwater swamp ecosystems dominated by Myristica species—a genus of primitive, evergreen trees— found in Southern Western Ghats) are found in the sanctuary.
- **International Recognition:** Designated as an **Important Bird Area** by BirdLife International.

Madhya Pradesh

Kuno National Park (NP)

- Recently, **five more cheetahs were released** into Kuno National Park.

About Kuno National Park

- **Location:** Sheopur district of **Madhya Pradesh** and extended in Vindhyan Hills.
- It derives its **name from Kuno River** (tributary of Chambal River).
- It was declared a **Wildlife Sanctuary** in 1981 and **National Park in 2018.**
- It falls under **northern tropical dry deciduous forest.**
- **Flora:** Kardhai, Salai, Khair trees, etc
- **Fauna:** Spotted deer, Sambar, Nilgai, Barking deer, etc.

Odisha

Bhitarkanika National Park (BNP)

- Migratory birds leave BNP **due to rise in temperature.**

About BNP

- **India's 2nd largest mangrove ecosystem** after the Sunderbans.
- Formed by **creeks & canals** fed by **Brahmani, Baitarani, Dhamra, and Patasala rivers**.
- **Fauna:** Consists of largest population of **endangered Saltwater Crocodiles** in India.
  - **Olive Ridley** turtles' nest on Gahirmatha and other nearby beaches.
  - Other key species include **Migratory birds, 8 Kingfisher varieties, deer, hyenas, wild boars**, etc.
- **Unique Phenomenon: Bagagahana or the heronry** near Surajpore creek wherein thousands of **birds colonise** the creek for nesting and the **aerial acrobatics performed before the mating**.

Uttar Pradesh

Parvati Arga Bird Sanctuary

- Ministry of Environment, Forest and Climate Change (MoEFCC) **organise** the World Wetlands Day 2025 celebrations at the Parvati Arga Ramsar Site

Parvati Arga Bird Sanctuary

- **Location:** Tarabganj Tehsil, Uttar Pradesh.
- **Habitat:** Two oxbow lakes, a permanent freshwater wetland.
  - **An oxbow lake** is a crescent-shaped lake formed when a meander of a river is cut off from the main flow, creating a standalone body of water.
- **Biodiversity: Critically endangered white-rumped vulture** and **Indian vulture;** also, the endangered Egyptian vulture.
- **Ecological Role:** Vital for roosting, breeding, and groundwater recharge.
- **Threat:** Invasive water hyacinth.

4.17. SPECIES IN NEWS

Terrestrial

Ongole breed

Context
- A cow of the **Ongole breed (named viatina-19),** has set a record in Brazil by fetching 41 crores at an auction.

Characteristics
- The Ongole are **large-sized animals** with loosely knit frames.
- The forehead is **broad between the eyes and slightly prominent**. Eyes are elliptical in shape.

- **Other Important indigenous breeds:** Gir (Gujarat), Hallikar (karnataka), Khillari (Maharashtra), Tharpakar (Rajasthan) and Deoni (Andhra Pradesh).

Habitat
- Also called the Nellore breed, belongs to **Andhra Pradesh.**

Avian Species

Malabar Grey Hornbill

IUCN STATUS
VU

Context
- Researchers from Kerala have been awarded the **Future Conservationist Award by the Conservation Leadership Programme (CLP)** for their project on conserving the Malabar **Grey Hornbill.**

Characteristics
- Sexes are alike, except that the **females have black on the base of the bill.**
- Characterised by the a distinctive series of **yelping sounds** that rise to a crescendo, sounding like manic laughter.
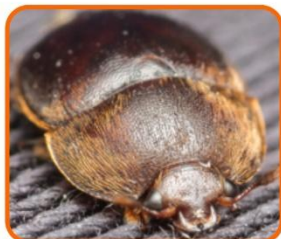
Habitat
- Endemic to the **Western Ghats of India.**

PT 365 - Updated Classroom Study Material

Reptiles, Insects, Amphibians, etc.

Small Hive Beetle (SHB)

Context
- Alien or non-native beetle, **Small Hive Beetle (Aethinatumida)**, was recorded for the first time in India in West Bengal.

Characteristics
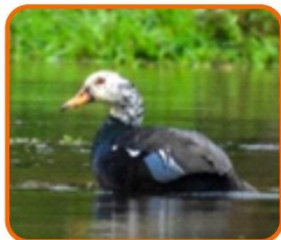- **Oval-shaped, reddish-brown, 5–7 mm long;** life cycle includes egg, larva, pupa, and adult stages.
  - Females invade hives to **lay eggs; larvae feed on pollen, honey, and bee eggs,** defecating in honeycombs and spoiling them.

Habitat
- **Sub-Saharan Africa** (Seldom causes harm to Africa but creates havoc across other regions).

White-winged Duck

IUCN STATUS
CR

WPA, 1972
Schedule I

Context
- A rare pair of **the White-winged duck** was spotted in the **Dihing Patkai National Park (Assam).**

Characteristics
- Well-known for its **conspicuous white patches** on the wings and distinctive ghostly calls.
  - State bird of Assam and called 'Deo Hanh' (spirit duck) in Assamese.

Habitat
- Endemic to the Indo-Malayan biogeographical realm.
  - **Elusive forest-dwelling duck** found in lowland evergreen forests and wetlands.

Conservation Measures
- **White-winged Duck Conservation Strategy and Action Plan 2022,** formulated by the Assam government and Wildlife Trust of India.

PT 365 - Updated Classroom Study Material

PT 365 - Updated Classroom Study Material

Gambusia Affinis and **Poecilia reticulate**

Context

○ NGT sought a response from Centre on two **invasive fish species** (both capable of tolerating brackish water, high salinities and temperatures) **being used as biological agents** for controlling mosquitoes.

About Gambusia Affinis (Western mosquitofish)

Characteristics

○ Found in freshwater; Survive in very low oxygen saturations.
  ○ It was **among the 100 world's "worst invasive alien species"** by IUCN.

Habitat

○ **Mississippi River basin** .
○ **Ernavikulam National Park in Anamalai Hills, Kerala,** home to the largest population.

About Poecilia reticulata (Guppy, Millionfish and Rainbow fish)

Characteristics

○ Found in **Shallow edges of pools and streams.**

Habitat

○ Northern South America and Caribbean islands.

IUCN STATUS
LC

Jumping Spiders

Context

○ A collaborative research for the first time recorded the discovery of **two new species of jumping spiders (belonging to the genus Epidelaxia)** from the **Shendurney Wildlife Sanctuary (Kerala) in Western Ghats**.

Characteristics

○ It belonging to the largest family of spiders, can **jump a distance thirty times the length of their body**.

○ Jumping spiders tend to have **larger front legs helping them grasp and hold their prey** while their **back legs are used for jumping**.

○ Most spiders have **eight or six eyes but poor vision. Jumping spiders with 8 eyes arranged in pairs are an exception** which can see more colours than humans.

○ The **day-hunting jumping spider can see in the red spectrum, green spectrum, and in UV light.**

Behaviour

- Jumping spiders are **active predators** eating insects and other spiders.
- A **jumping spider's silk is also used to build "pup tents"** where they will

Habitat

- They are **very common in the tropics**, but some also live in northern and even Arctic regions.

Flora

Tulips

Context

- **Council of Scientific and Industrial Research (CSIR)-Indian Institute of Integrative Medicine (IIIM**) Field Station Bonera, Jammu seeks to Indigenize Tulips.
  - Indira Gandhi Memorial Tulip garden, Srinagar is the largest tulip garden in Asia.

Characteristics

- **Bulbous herb,** member of the lily family, a popular garden flower occurring in wide range of colors having **erect flowers** with **long, broad, parallel-veined leaves.**
  - **Climate:** Planted before the ground freezes (in Northern climate); planted annually (in warmer climates).
  - **Soil:** Well-drained loam.

Habitat

- Central Asia and Turkey.

Orchids

Context

- A new orchid species is recorded for the **first time in Manipur.**

Characteristics

- Can be **terrestrial**, **epiphytes** (grow on trees), **lithophytes** (grow on rocks), **saprophytes** (grow on decaying matter) or **semi-aquatic**.
  - Grown by **seeds, tissue culture and vegetative propagation.**

WPA, 1972
Schedule III

Habitat

- **Arunachal Pradesh** is considered as **"Orchid Paradise of India"** harbouring 40% of country's orchid species.
- **Five** major flowering regions in India include **North Eastern Himalayas, Peninsular region, Western Himalayas, Western Ghats** and **Andaman and Nicobar Islands.**

Conservation Measures

- **India** is home to about **1256 species,** of which **only 11 are protected under Wildlife Protection Act 1972.**

4.18. ERRATA

PT365 Environment (April 2024 to October 2024)

- In **Article 1.2.3. Mangrove conservation**, it is incorrectly mentioned that Mangroves cover in India, according to the India State of Forest Report 2023, has increased by 17 sq km.
  - Correct information is **Mangrove cover in India has decreased by 7.43 sq km** according to the India State of Forest Report 2023.

PT365 Species in News

- There is a mismatch in text and infographic regarding **Neelakuriniji's** IUCN Status, whereby in the infographic it is incorrectly mentioned that **Neelakuriniji** is **Endangered.**
  - The correct information is that Neelakuriniji is listed as **Vulnerable** in the IUCN Red List of Threatened Species.

5. SOCIAL ISSUES

5.1. THREE-LANGUAGE FORMULA

Why in the news?

Some states have been expressing opposition for National Education Policy (NEP) 2020's three-language formula.

About NEP and Three-Language Formula

- **NEP 2020 Policy:** Requires students **to learn three languages,** with **at least two being Indian.**
- **Changes from Past Policies:** Unlike the NEP 1968, which mandated Hindi, English, and a regional language, NEP 2020 allows **flexibility** in language selection by States and students, promoting **multilingualism** while respecting **cultural and regional diversity.**

Evolution of Three-Language Formula Policy

- **Article 351 of the Constitution:** Makes the **Union duty bound to promote** the spread of the **Hindi language.**
- **Kothari Commission (1964-66):** It first proposed the **three-language formula.**
- **National Education Policy (NEP), 1968: Adopted** the **three-language formula** while promoting use of **regional languages** at the primary and secondary stages as well as at the university stage.
- **1992 Programme of Action:** Mother tongue/ regional language should be the medium of communication at the pre-school level
- **Right to Education Act, 2009:** As far as possible, the medium of instruction in school should be the child's mother tongue.
- **National Education Policy (NEP), 2020:** Advocates for utilising the home language, mother tongue, local language, or regional language as the medium of instruction at least until Grade 5, but preferably extending till Grade 8 and beyond.

Steps Taken to Promote Multilingualism In Indian Education System

ASMITA Initiative: ASMITA (Augmenting Study Materials in Indian Languages through Translation and Academic Writing) aims to produce 22,000 books in 22 scheduled languages over five years.

Bahubhasha Shabdkosh: Aims to create a multilingual dictionary repository.

Real-time Translation Architecture: led by the National Education Technology Forum (NEFT) in collaboration with Bharatiya Bhasha Samiti for developing technology for real-time translation in Indian languages.

Bharatiya Bhasha Pustak Scheme: Provides digital textbooks and study materials in multiple Indian languages.

Bhashini: It is an AI-led language translation system that enables people to speak in their language while talking to speakers of other Indian languages.

5.2. ANNUAL STATUS OF EDUCATION REPORT (ASER) 2024

Why in the News?

The ASER, 2024 released by **NGO Pratham Foundation**.

About ASER, 2024

- It is a **nationwide rural household-based survey of children's schooling and learning status.**
- It tests the **schooling status** for children in the age group of **3-16,** and the **ability to read simple text** and **do basic arithmetic** in the age group of **5-16.**
- The ASER survey was conducted **annually** from 2005 till 2014. Thereafter, an **alternate-year cycle** was introduced.
- In 2024, for the **first time,** it includes a component of **'Digital Literacy'** among the age group **14-16.**

5.2.1. NATIONAL BOARD OF ACCREDITATION (NBA)

Madras High Court granted an interim stay, restraining NBA from publishing the **National Institutional Ranking Framework (NIRF) ranking** for 2025.

- NIRF aim to bring transparency and accountability to the higher education system by providing a **comprehensive** and **standardised framework** for ranking institutions.

About National Board of Accreditation (NBA)

- **Genesis: Established** in the year **1994 by the AICTE (All India Council of Technical Education),** under Section 10 (u) of **AICTE Act, 1987.**
  - In **2010**, the NBA was made an **independent autonomous institution**. It was made **independent of AICTE** administratively and financially in **2013**.
- **Mandate:** To assess the qualitative competence of programs offered by Technical Institutions from Diploma to Post graduate level in Engineering & Technology, Management, etc.
  - NBA accredits programs and **not the institutions.**

5.3. CHILD ADOPTION

Why in the News?

Recently the Centre informed the **Rajya Sabha** that over **30,000 Indian parents are waiting** for adoption and a total **62,592** children are living in **Child Care Institutions (CCIs) under Mission Vatsalya** including Open Shelters, Specialized Adoption Agencies, Observation Homes, etc.

Child Adoption in India

- Adoption in India is primarily governed by **Juvenile Justice (Care and Protection of Children) Act, 2015 (JJ Act, 2015).**
  - It seeks to ensure **safety, security, dignity and wellbeing of children in need of care and protection.**
  - India saw a record 4,515 child adoptions in FY 2024-25 with CARA introducing 8,598 newly identified children into the adoption pool.
- **Nodal Ministry**: Union Ministry of Women and Child Development (MoWCD)

- **Central Nodal Agency**: Central Adoption Resource Authority (CARA)
- **Implementation** of the JJ Act, 2015 is the responsibility of **States/UTs**, through institutions like:
    o State Adoption Resource Agencies (SARA)
    o local Child Welfare Committees
    o District Child Protection Units (DCPUs)

Central Adoption Resource Authority (CARA)

- Established in **1990** as the nodal body for **adoption of Indian children**.
- It is a **statutory body** under the **JJ Act** under the Ministry of Women & Child Development.
- **Functions**: It monitors and regulates **domestic (in-country) and inter-country** adoptions through Child Adoption Resource Information & Guidance System (**CARINGS**).
- Central Authority to deal with inter-country adoptions under **Hague Convention on Inter-country Adoption, 1993**.
    o **Hague Convention on Protection of Children and Cooperation in Respect of Intercountry Adoption (1993)** ensures ethical, legal, and transparent international adoptions while preventing child trafficking.
        > **India** ratified the Convention in **2003**.

> **Mission Vatsalya**
>
> - Formerly known as **Integrated Child Protection Scheme (ICPS)**, it is a **Centrally Sponsored Scheme** to support Children in Need of care and Protection (CNCP) and Children in Conflict with Law (CCL).
>   o **ICPS** was subsumed under **Mission Vatsalya** from **2021-22**.
> - **Objectives**: Establishing essential services, emergency outreach services for children and strengthening institutional and non-institutional care services.
> - The **CCIs** established under the Mission support **age-appropriate education, access to vocational training, recreation, health care and counselling.**
> - It provides for setting up of **statutory and service delivery structures** at State and District level for achieving goals for children living in difficult conditions.
>   o E.g. **State Child Protection Society, State Adoption Resource Agency (SARA), District Child Protection Units.**

5.4. PM YUVA (YOUNG, UPCOMING AND VERSATILE AUTHORS) SCHEME

Why in the News?

Ministry Of Education launched PM Scheme for Mentoring Young Authors (PM-YUVA 3.0).

About PM-YUVA 3.0

- It is an **Author Mentorship programme** to train young and budding authors (below 30 years of age) and aligns with National Education Policy 2020.
- **Objective:** To promote reading, writing and book culture & project Indian writings globally.
- **Ministry: Ministry of Education**
- **Implementing Agency: National Book Trust**
- **A total of 50 authors** will be selected through a contest on themes of:-
    o Contribution of Indian Diaspora in Nation Building;
    o Indian Knowledge System;
    o Makers of Modern India (1950-2025)
- Selected Books will be published by NBT and translated into other Indian languages, fostering cultural and literary exchange while promoting **'Ek Bharat Shreshtha Bharat'.**

About PM YUVA 2.0 Scheme

- **Ministry:** Launched in **2022** as part of **India@75 Project (Azadi Ka Amrit Mahotsav).**
- **About**: It is an **Author Mentorship programme** to train young and budding authors **below 30 years of age.**
- **Aim: To promote reading, writing and book culture** in country, and project India and Indian writings globally.
- **Significance**: To develop a stream of writers who can write on subjects **to promote Indian heritage, culture and knowledge system.**
- **Theme: Democracy** (Institutions, Events, People, and Constitutional Values).

About YUVA 1.0 Scheme

- Launched in **2021** to empower **young authors** and provide them a platform to express their perspectives on India's history and contemporary narratives.
- **Theme: National Movement of India** with focus on Unsung Heroes.

5.5. OTHER IMPORTANT NEWS

5.5.1. YUWAAH

The Ministry of Rural Development (MoRD) and **United Nations Children's Fund (UNICEF) YuWaah** have signed a Statement of Intent (SOI) to empower **rural women and youth** across India.

About UNICEF YuWaah

- Launched in **2019,** it is a platform where **youth-centric action** is co-created, especially facilitated by **young Indians** from diverse backgrounds.
- It is the **India Chapter** of **Generation Unlimited (2018)** which aims to **skill** the **world's 1.8 billion young people** and connect them to opportunities for **employment, entrepreneurship, and social impact.**
- **Objective:** Building skills and creating **socio-economic** and **change-making opportunities** for young people, with a special **focus on women and marginalized groups**.
  - It will unlock the potential of **India's 350 million young people**.
- It fosters **Public-Private-Youth Partnerships** to drive innovative solutions, creating pathways for **learning to earning transition** and **youth-led climate action**.
- **#ImpactWithYouth campaign**: Under YuWaah, aimed at **promoting youth centrality in public and private sectors** through **partnerships** between leaders and young individuals.

YuWaah's Strategic Priorities in India

- Build pathways for **100 million** young people **to aspirational economic opportunities.**
- Facilitate **200 million** young people to gain relevant **skills aligned** with the **future of work** and lead productive lives.
- Partner with **300 million** young people as **change-makers** and create spaces for developing their **leadership.**

5.5.2. WORLD HAPPINESS REPORT

World Happiness Report 2025 was published by **Wellbeing Research Centre** at the University of Oxford, in partnership with **Gallup, the UN Sustainable Development Solutions Network** and an independent editorial board.

About the Report

- Global Happiness Ranking is based on single question derived from the **Cantril Self-Anchoring Striving Scale (Cantril Ladder).**
  - **Top** of the ladder represents **best** possible life while at the bottom represents worst possible life.

- **Parameters**: GDP per capita, social support, healthy life expectancy at birth, freedom to make life choices, generosity, and perceptions of corruption.
- **Finland** ranks first, followed by Denmark and Iceland while **India** is **ranked 118th** out of 147 countries.

5.5.3. UN COMMISSION FOR SOCIAL DEVELOPMENT

The ongoing **63rd Session of the Commission** focuses on "**Strengthening solidarity, social inclusion, and social cohesion**" as part of advancing the 2030 Agenda for Sustainable Development.

About UN Commission for Social Development

- It is a **Commission** within **the UN Economic and Social Council** (ECOSOC) focusing on social development issues.
- Originally known as the **Social Commission**, CSocD was established by an **ECOSOC Resolution in 1946**. It was renamed in **1966**.
- **Purpose:**
  - To provide advice to the UN on **social development issues**.
  - Promoting social policies that support the overall development goals of the UN, particularly related to **eradicating poverty, advancing social integration, and ensuring full employment and decent work for everyone**.
  - Following up on the implementation of the **Copenhagen Declaration and Programme of Action on Social Development**.
    - The Copenhagen Declaration and Programme of Action were adopted at the **World Summit for Social Development, 1995**.
    - It made people the centre of development to advance social development through **10 commitments**, including **eradicating poverty, reducing inequality and promoting social integration.**

5.5.4. COMMISSION FOR SENIOR CITIZENS

Kerala has become the first state in India to pass a **Kerala State Senior Citizens Commission Bill** creating a commission for senior citizens.

About Commission for Senior Citizens

- **Need:** People over age 60 in Kerala were **13.1 per cent** compared to the national average of **8.3 per cent** in 2015, according to **Kerala's planning board.**
- **Objective:** To Provide for Protection, Welfare and Social Security of Senior Citizens and for inspiring confidence in them.
- **Composition:** Chairperson and not less than three members, all of whom will be senior citizens.

About National Council of Senior Citizens (NCSrC)

- In pursuance of the National Policy for Older Persons (NPOP, 1999), a **National Council for Older Persons (NCOP)** was constituted in **1999** under the **Chairpersonship** of the **Minister for Social Justice and Empowerment.**
  - **Aim:** To oversee Policy formulation and implementation and advise the Government on welfare of the aged.
  - In **2012**, the NCOP was **reconstituted** in order to encourage more participation from every region and **renamed** as **National Council of Senior Citizens (NCSrC).**
- The **National Policy on Senior Citizens 2011** called for the establishment of **National Commission for Senior Citizens** at the Centre and **State Commissions** at the State level under an **Act of Parliament**..

5.5.5. GARBH-INI-DRISHTI

Department of Biotechnology has launched **GARBH-INi-DRISHTI** at the Translational Health Science and Technology Institute (THSTI) in Faridabad (Haryana).

PT 365 - Updated Classroom Study Material

What is GARBH-INi-DRISHTI?

- It is a **data dashboard** that provides a comprehensive overview of one of South Asia's largest maternal and child health databases.
- **Significance:** Access to clinical data, images, and bio specimens collected from over 12,000 pregnant women, newborns, and postpartum mothers.
- This platform developed under the **GARBH-INi program**, a **flagship programme** supported by the **Department of Biotechnology (DBT).**
  - **The programme focuses** on finding solutions for better birth outcomes utilizing a multi-pronged approach of integrating clinical epidemiology, multi-omics **biomarkers** and AI-driven tools for personalized predictions.

5.6. ERRATA

PT 365 Social Issues (April 2024 to October 2024)

- **Article 5.1 National Family Health Survey-5 (NFHS) Report** (Page 29): Under the Key Highlights of the Survey, and the heading Infant Mortality Rate, the **word birthday was misspelled as sirthitay**.
  - **Correct information**: IMR is the number of infant deaths (before 1st birthday) for every 1000 live births.
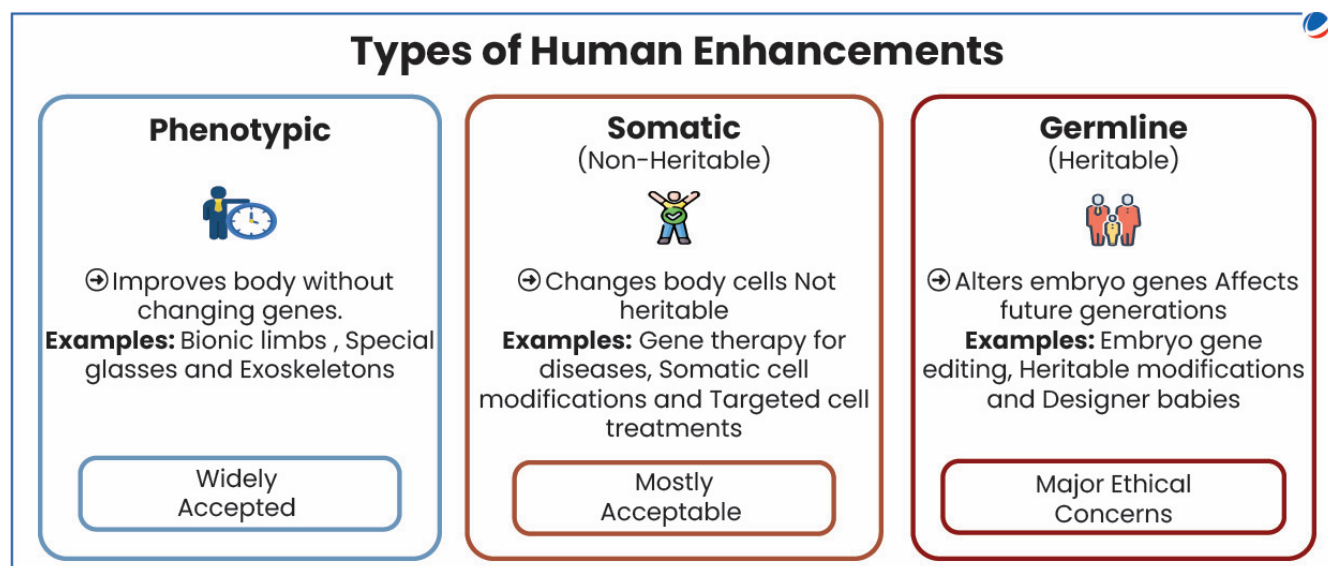
6. SCIENCE & TECHNOLOGY

6.1. HUMAN ENHANCEMENT

Why in the News?

The human enhancement industry was worth $125 billion in 2024 and is expected to grow to $348.5 billion by 2033, according to a recent report.

What is Human Enhancement?

- It refers to a natural, artificial, and technological **alteration of the body** to **enhance cognitive and physical capabilities and functions of individuals.**
- It is undertaken using **drugs, hormones, implants, genetic engineering to dietary supplements and cosmetic surgeries** for self-improvement.
- Unlike traditional medicine, which seeks to treat or cure illness, human **enhancement focuses on surpassing typical human limits.**
  - **E.g.,** advances in human enhancement technologies provide **resistance against diseases like malaria, tuberculosis, and Lyme.**

Types of Human Enhancements

Phenotypic	Somatic (Non-Heritable)	Germline (Heritable)
⊕ Improves body without changing genes. **Examples:** Bionic limbs , Special glasses and Exoskeletons	⊕ Changes body cells Not heritable **Examples:** Gene therapy for diseases, Somatic cell modifications and Targeted cell treatments	⊕ Alters embryo genes Affects future generations **Examples:** Embryo gene editing, Heritable modifications and Designer babies
Widely Accepted	Mostly Acceptable	Major Ethical Concerns

Related Concept

Epigenome Editing

- Studies found that Gene Editing can be performed in a gentler way using Epigenome editing.
- **About Epigenome Editing**
  - It adjusts **gene transcription** through **modifying epigenome,** directly **targeting root of dysregulation** while leaving **primary DNA sequence intact.**
    - **Epigenome** refers to all chemical compounds and modifications **(like methyl groups or histone modifications)** that regulate gene expression without changing DNA sequence.
  - **Unlike traditional gene editing methods** that involve cutting DNA, epigenome editing allows for precise control over gene expression **(With Reversible Changes)**, making it a **safer alternative.**

6.2. TRANSGENIC ORGANISM

Why in the News?

A transgenic mouse is in spotlight following the US President misstatement on 'transgender mice' funding.

About Transgenic Organisms

- **Concept: Transgenic** refers to an organism or cell whose genome has been altered by the introduction of **one** or **more foreign DNA sequences** from **another species**.
- **Transgenic Mouse:** Key model for studying biological processes due to its **physiological, anatomical, and genomic similarities with humans.**
- **Purpose & Applications**
    - **Understanding Normal Physiological Processes**: **E.g.,** Transgenic mice created to study metabolism
    - **Modelling Human Diseases**: **E.g.,** Transgenic pigs, used to model human diseases like Alzheimer's.
    - **Developing New Treatments: E.g.,** Transgenic zebrafish, accelerate drug testing & therapy development.
    - **Production of Therapeutic Proteins: E.g., Transgenic goats** developed to produce **human antithrombin**.

Related News

Pink Bollworm-Resistant GM Cotton

- CSIR-National Botanical Research Institute (NBRI) has developed the world's First Pink Bollworm-Resistant GM Cotton.
    - Varieties like **Bollgard 1 and Bollgard 2** have controlled certain **bollworm species** but have not been effective against Pink Bollworm (PBW) as it has developed resistance to **the Cry 1Ac protein.**
- To address this, CSIR-NBRI engineered **a novel insecticidal gene**, demonstrating superior resistance against PBW, compared to **Bollgard 2 cotton.**
    - It also **protects** against other pests like the **cotton leafworm and fall armyworm.**

6.3. NAVIGATION WITH INDIAN CONSTELLATION (NAVIC)

Why in the News?

The Indian Space Research Organisation (ISRO) successfully launched **NVS-02 satellite** from **Satish Dhawan Space Centre, Sriharikota**, Andhra Pradesh, making it the **100th launch of ISRO**.

More on the News

- It was launched into **Geosynchronous Transfer Orbit** used **GSLV-F15 Vehicle**, which is a three-stage **launch vehicle** with a third-stage **CUS 15 cryogenic engine.**
- The NVS-02 is the **second satellite in the NVS series**, and part of **India's Navigation with Indian Constellation (NavIC).**

What is NavIC?

- A **regional navigation satellite system** (erstwhile known as **Indian Regional Navigation Satellite System (IRNSS))** launched by ISRO.
- Consists **of 7 satellites** of which **3 satellites placed in geostationary orbit** & **4 satellites** are placed in inclined **geosynchronous orbit.**

Key Navigation Satellite System

- **GPS (Global Positioning System)** – United States
- **GLONASS (Global Navigation Satellite System)** – Russia
- **Galileo** – European Union
- **BeiDou** – China
- **QZSS (Quasi-Zenith Satellite System)** – Japan

- **Services: Standard Position Service (SPS)** for civilian users & **Restricted Service (RS)** for strategic users.
- **Coverage Area**: India and a **region up to 1500 km** beyond Indian boundary.
- NavIC's SPS offer **accuracy of better than 20 meters** and a **timing accuracy of better than 40 nanoseconds.**
    - **NavIC SPS** signals are interoperable with the other global navigation satellite system (GNSS) signals.

6.4. LIFE CYCLE OF A STAR
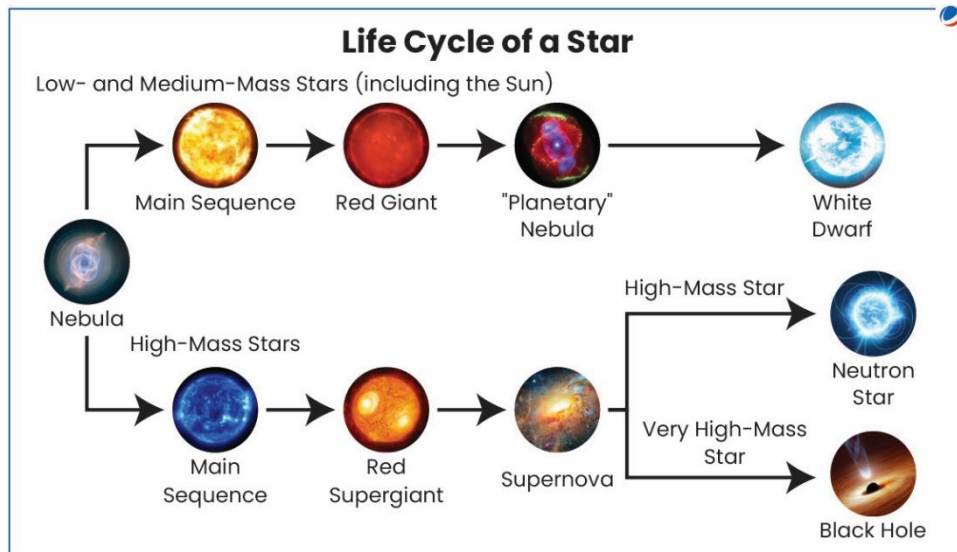
Why in the News?

The Webb Space Telescope has captured an image of a plume of gas and dust streaming from a star in the making.

More on the News

- Image has been released by the NASA and European space Agency.
- The composite images of **plume of gas and dust streaming from a star** are from about **625 light-years from Earth** in **one of the closest star-forming regions of our Milky Way galaxy**.

Life Cycle of a Star

- **Nebula (Birth):** A **large cloud of gas (mainly hydrogen and helium) and dust.**
  - **Protostar:** Gravity collapses nebula into **dense, heating, spinning regions** that form a **protostellar disk.**
- **Main Sequence:** Star's **longest phase,** steadily **fusing hydrogen into helium** in its core.
  - **Our Sun is about halfway** through its main sequence**.**

Life Cycle of a Star

- **Red Giant or Supergiant:** When **hydrogen in the core is depleted,** the star evolves based on its mass.
  - **Low to Medium Mass Stars (e.g., the Sun):** Core contracts, outer layers expand, and star **becomes a red giant.**
  - **Massive Stars: Expand into supergiants,** fusing heavier elements (e.g., carbon, oxygen, up to iron) in successive stages.
- **End Stage**
  - **Low to Medium Mass Stars:** Outer layers eject as a **planetary nebula** and core becomes a dense, non-fusing **white dwarf.**
    - > If its mass stays below the **Chandrasekhar Limit (1.4 solar masses)**, it remains stable.
  - **High Mass Stars (10 solar masses or more):** When the **core accumulates iron**, it collapses under gravity and rebounds in a catastrophic explosion called **supernova**.
    - > If the **core remnant is 1.4–3 solar masses**, it becomes an **incredibly dense neutron star.**
    - > If the remnant **exceeds ~3 solar masses,** it collapses into a **black hole**, with gravity so strong that not even light escapes.

6.5. METEORITE

Why in the News?

Scientists confirm meteorite fall in a village in Beed (Maharashtra).

PT 365 - Updated Classroom Study Material

About Meteorite

Difference between Meteoroid, Meteor and Meteorite

In space	In atmosphere	On earth
Meteoroid	**Meteor**	**Meteorite**
⊛ **Space rocks,** usually, pieces of other, larger bodies that have been broken or blasted off. E.g. Planets, asteroids, comets.	⊛ Formed when meteoroids enter the Earth's or a planet's **atmosphere.**	⊛ A meteoroid that survives the trip through the atmosphere and hits the ground.
⊛ Both rocky and/or metallic.	⊛ Called **'shooting stars'** as they enter with **high speed** and burn up due to atmospheric pressure.	⊛ They can create '**Impact Craters**' on impact with the surface. E.g. Lonar Lake (Maharashtra)
⊛ Smaller than asteroids and contain less water and ice than comets.	⊛ '**Meteor showers'** is a celestial event where several meteors hit Earth's atmosphere over a short period.	

Note 1: >50,000 meteorites have been found on Earth. Of these ~99.8% come from asteroids. (NASA).
Note 2: In India, Geological Survey of India (GSI) is the custodian of all meteorite falls/finds in the country.

Related News

Asteroid Bennu

- NASA's Asteroid Bennu sample reveals mix of life's ingredients.
- **About Asteroid Bennu**
    - Bennu is a **small, near-Earth asteroid** that **passes relatively close to Earth about every six years.**
    - NASA's **OSIRIS-REx spacecraft** collected samples in **2020** using a robotic arm and returned them to Earth in **2023** for analysis.
    - **Findings**: Essential life-building compounds, including **amino acids**, **nucleobases**, and minerals suggesting water once existed on **Bennu**.

6.6. NON-COMMUNICABLE DISEASES (NCD)

Why in the News?

The Ministry of Health & Family Welfare launched the Intensified Special NCD Screening drive under the National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD).
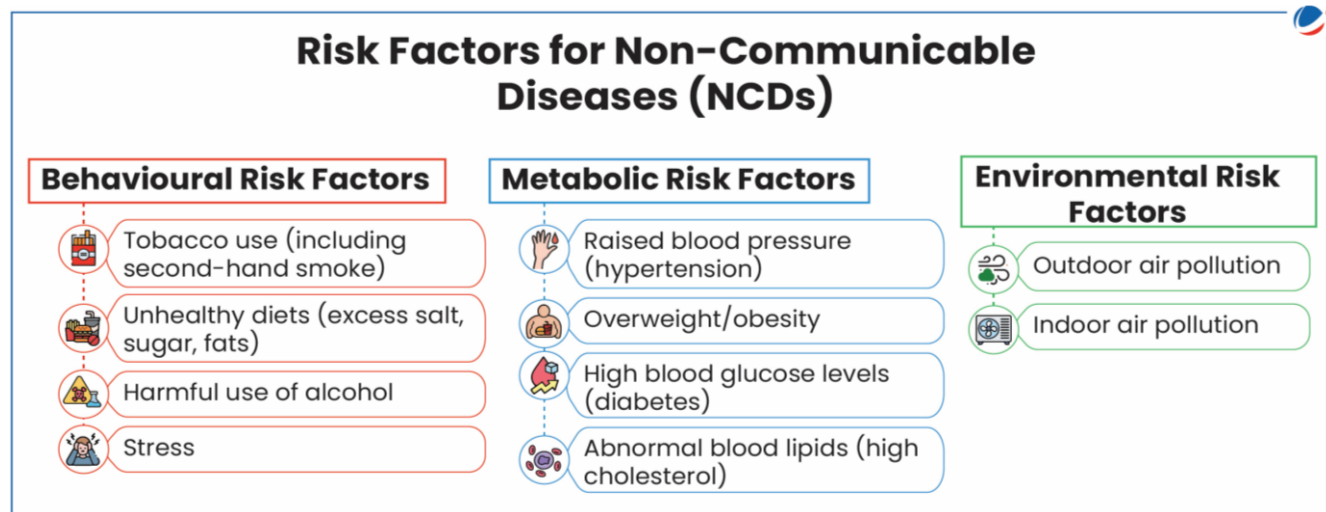
About NP-NCD

- **Launch:** NP-NCD, formerly known as **National Programme for Prevention and Control of Cancer, Diabetes, Cardio- vascular diseases and Stroke (NPCDCS) was launched in 2010.**
    - Subsumed under **National Health Mission (NHM)** in 2013-14.
- **Key Objectives of NP-NCD: Health promotion through behaviour changes** with involvement of community, civil society, media etc.

About Non-Communicable Diseases (NCDs)

- **NCDs** are **chronic diseases that are not transmissible** from one person to another.
- Main types of NCDs are **cardiovascular diseases** (such as heart attacks and Stroke), **cancers, chronic respiratory diseases** (such as chronic obstructive pulmonary disease and asthma) and **diabetes.**

o When these are caused by an unhealthy lifestyle, these diseases are also called **lifestyle diseases.**
- NCDs tend to be of **long duration**.

Risk Factors for Non-Communicable Diseases (NCDs)

Behavioural Risk Factors
- Tobacco use (including second-hand smoke)
- Unhealthy diets (excess salt, sugar, fats)
- Harmful use of alcohol
- Stress

Metabolic Risk Factors
- Raised blood pressure (hypertension)
- Overweight/obesity
- High blood glucose levels (diabetes)
- Abnormal blood lipids (high cholesterol)

Environmental Risk Factors
- Outdoor air pollution
- Indoor air pollution

Burden of NCDs

- **Global Scenario: Four top killers** that together account for more than 80% of all premature NCD deaths annually **include** cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes.
- **Indian Scenario** NCDs Account for **63% o**f All Deaths in India.
  o Cardiovascular diseases (27%) is the highest contributor.

> **Initiatives for Controlling NCDs**
> - **Global**
>   o **WHO Global Action Plan** (2020 to 2030)
>   o **Global NCD Compact 2020–2030.**
> - **Indian:**
>   o **Affordable Medicines and Reliable Implants for Treatment (AMRIT)** aims to provide affordable medicines for the treatment of cancer, cardiovascular diseases etc.
>   o **Eat Right India movement by FSSAI** promotes healthy eating.
>   o **National Oral Health Programme**
>   o **Other:** National Mental Health Programme (NMHP), National Tobacco Control Programme (NTCP), 75/25 Initiative for **hypertension and diabetes**, Fit India Movement, etc.

6.7. DEEP OCEAN MISSION

Why in the News?

Recently, the fourth-generation deep-ocean submersible named **Matsya 6000** successfully completed its wet testing.

About MATSYA 6000

- **MATSYA 6000** is an **indigenously** built **manned submersible**, under the **Samudrayaan project (a project under the Deep Ocean Mission)**.
  o **Objective of Samudrayan Project** is to develop a self-propelled manned submersible to carry 3 human beings to a water depth of 6000 meters in ocean with scientific tools for deep ocean exploration.
- Developed by **National Institute of Ocean Technology (NIOT)**.
- **Aim:** To comprehensively study deep-sea resources and to assess marine biodiversity assessment.
- With its launch, India will become **sixth country** (after **US**, **Russia**, **Japan**, **France**, and **China**) to have crewed under-sea expedition.

PT 365 - Updated Classroom Study Material

About Deep Ocean Mission

- **Launched:** In 2021 by MoES as a **Central Sector Scheme** with Cabinet approval.
- **Purpose:** To develop technologies for exploring deep ocean resources, promoting sustainable marine development, supporting the Blue Economy initiative, addressing climate change and pollution.

Note: India has been allotted a site of **75,000 sq.km. in Central Indian Ocean Basin (CIOB)** by **UN International Sea Bed Authority** for the exploitation of polymetallic nodules(PMN).

Six Major Components of Deep Ocean Mission

- Deep sea mining & manned submersible
- Ocean climate change advisory services
- Exploration & conservation of deep-sea Biodiversity
- Deep ocean survey and exploration
- Energy and freshwater from the ocean
- Advanced marine station for ocean biology

6.8. ADVANCED DRIVER ASSISTANCE SYSTEMS (ADAS)

Why in the News?

The global Advanced Driver Assistance Systems (ADAS) and AD system sensor market is projected to be worth $43 billion by 2030: NITI Ayog Report.

What is ADAS?

- ADAS are a set of **electronic systems** which are integrated into vehicles to **enhance driver safety, improve vehicle performance, and provide convenience.**
- **Equipment used in ADAS:** Radar, Lidar, GPS, sensors, etc.
- **Types of ADAS:**
  - **Active ADAS:** Actively intervene and assist in critical driving situations and can even perform automatic corrective actions
    - **E.g.** Collision avoidance systems

Advanced Driver Assistance Systems

Surround view, Blind spot detection, Park assist, Surround view, Rear collision warning, Cross traffic alert, Traffic sign recognition, Emergency braking, Pedestrian detection, Collision avoidance, Park assist, Adaptive cruise control, Lane departure warning

Radar/LIDAR, Camera, Ultrasound

  - **Passive ADAS:** Limited to provide information and alerts to the driver without directly intervening in the driving process.
    - **E.g.** Blind spot monitoring systems
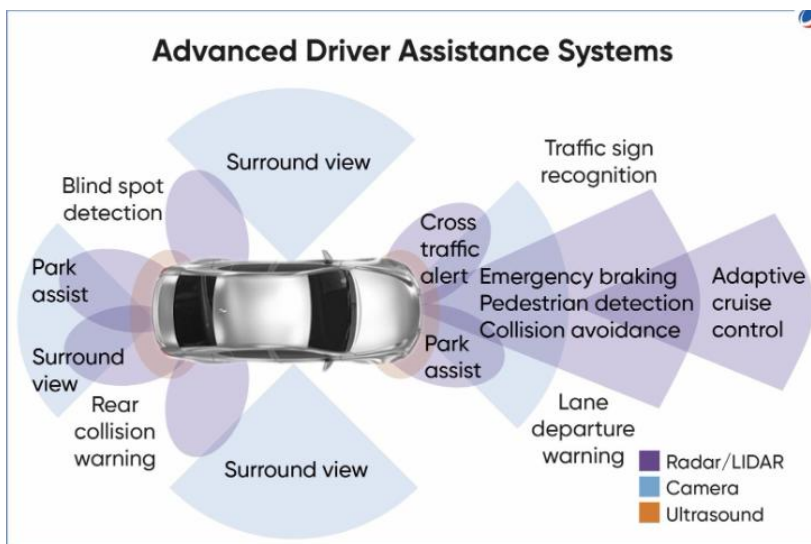
6.9. OTHER IMPORTANT DEVELOPMENTS/NEWS

6.9.1. OVOID CELLS

Researchers have discovered a new type of brain cells, named **Ovoid cells.**

About Ovoid cells

- **These are** type of **neuron** that plays a **fundamental role in recognition memory**.

o **Recognition memory** is the process by which the brain differentiates between new and familiar objects and forms long-term memories.

* Ovoid cells, named for their **distinct egg-like shape,** are present within the **hippocampus of humans, mice, and other animals.**
* These cells activate whenever we encounter something new, **triggering a process** that stores objects in memory.
* Finding could aid in the treatment of **brain conditions related to object recognition**, such as **Alzheimer's disease, Autism Spectrum Disorder, and Epilepsy.**

6.9.2. NATIONAL GENE BANK

Union Government has announced the **establishment of second National Gene Bank (NGB)** to conserve 10 lakh crop germplasm, ensuring future food and nutritional security.

* The **first** NGB was established in **1996** at the **ICAR-National Bureau of Plant Genetic Resources (NBPGR) in New Delhi.**
* **Germplasms** are the genetic constituents of plants or animals that are used in research, conservation and crop breeding.

About Gene Banks

* Gene banks are **biorepositories** that store genetic material of plants, animals, and microorganisms **to preserve biodiversity and ensure long-term food security.**
* **Types of Gene Banks: Seed Banks** (Svalbard Global Seed Vault, Norway), **Field Gene Banks** (live plants conserved in **natural conditions**), **Cryo-preservation Banks** (preserve **tissues, embryos, and cells**), **Pollen and DNA Banks**, etc.

6.9.3. BIOSAARTHI INITIATIVE

Ministry of Science and Technology unveiled BioSaarthi Mentorship Initiative for Biotech Startups

About the BioSaarthi Initiative

* It will provide **structured mentor-mentee engagements, offering personalized guidance** to **emerging biotech entrepreneurs.**
* It will strengthen **industry-academia collaboration**.

6.9.4. SATELLITE INTERNET

Indian telecom companies Airtel and Reliance Jio ink pacts with Spacex to bring starlink's satellite internet services to India.

About Satellite Internet

* It is a **wireless internet through communication satellites** orbiting the Earth and is location independent, global coverage.
* **Satellites communicate** with each other using **lasers**, reducing dependence on **ground stations**.
* **Significance:** Suited for unconnected areas, connectivity during disasters, provides connectivity between military bases and military planes, ships, drones etc.
* **Disadvantages:** Astronomical Interference**,** Atmospheric changes**,** technical limitations.
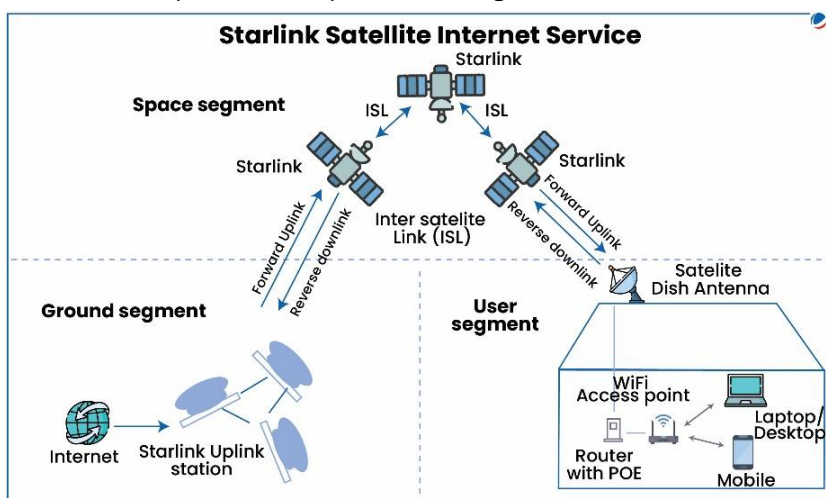
6.9.5. IRIS CHIP

IIT-Madras and ISRO jointly developed and successfully booted aerospace quality **SHAKTI-based Semiconductor Chip** – **IRIS** (Indigenous RISCV Controller for Space Applications).

About SHAKTI

- **SHAKTI class of systems are based on RISC-V** (Reduced Instruction Set Computer Five), an **open-source Instruction Set Architecture (ISA)**, for designing custom processors.
- 'SHAKTI' is backed by the Ministry of Electronics and Information Technology (MeitY) under its **Digital India RISC-V initiative (DIRV)**.
  - **DIRV** aims to promote **indigenous development of microprocessor-based products** that offer best-in-class security and visibility for users adopting RISC-V technology.

6.9.6. GALLIUM NITRIDE (GAN)

Chhattisgarh laid foundation stone for **India's first GaN-based semiconductor plant** in Raipur.

About GaN-based semiconductor

- It is a **wide bandgap semiconductor** material composed of gallium and nitrogen.
- **Advantages:** It offers **excellent efficiency, thermal stability, and fast switching speeds over Silicon and Other Semiconductor Materials.**

6.9.7. SANSAD BHASHINI INITIATIVE

Lok Sabha and **MeitY** agreed to develop the **Sansad Bhashini initiative** for **AI-powered multilingual Parliamentary operations.**

About Sansad Bhashini initiative

- **Aim**: To **leverage AI** to enhance **multilingual support (through Bhashini)** and streamline **parliamentary** operations.
- The key AI initiatives under Sansad Bhashini include AI-based translation, **AI-Powered Chatbot** for the Parliament website etc.

6.9.8. DARE2ERAD TB PROGRAM

India has completed 10,000 Genome Sequences of Mycobacterium Tuberculosis under the Dare2eraD TB program (Data Driven Research to Eradicate TB).

About DARE2ERAD TB program (2022)

- **Objective:** sequence >32,000 TB isolates to identify **drug resistance** mutations & improve treatment outcomes.
- **Ministry:** Department of Biotechnology (DBT), Ministry of Science and Technology.

6.9.9. RAFAEL AIRCRAFT

Centre approved deal for 26 Rafale Marine (M) fighter jets from France.

About Rafael aircraft

- **Manufacturer:** Dassault Aviation, a French aerospace company.
- **Generation:** 4.5 generation with maximum speed 1.8 Mach (1 Mach=1235km/hr)

Various Latest Generation Aircrafts	Specifications	Examples
Fourth generation jet fighters (1970- 1980s)	Ability to both **switch and swing roles** between air-to-air and air-to-ground.	MiG-29, F-16, Mirage-2000 etc.
Four and half generation jet fighters	Added 'stealth', radar absorbent materials, and thrust vector controlled engines	Eurofighter Typhoon, Rafale etc.
Fifth generation jet fighters	**Advanced stealth technologies** and advanced weapons,	F-22 Raptor, Chengdu J-20 etc.

Note: In December 2024, China flew two sixth-generation fighter prototypes, the J-36 and J-50.

- **Sixth-generation fighter jets** are characterized by attributes such as **AI integration, Hypersonic capabilities, Unmanned capabilities,** etc.

6.9.10. PROJECT VARSHA

INS Varsha, under Project Varsha to be operational by 2026.

About Project Varsha

- A classified **naval project** aimed at strengthening India's underwater nuclear capabilities.
- **Objective**: To develop a **secure underground base** to house a fleet of over **12 nuclear-powered ballistic missile submarines (SSBNs)**.
- Similar to Project Varsha from the east, Karwar base in Karnataka under **Project Seabird** safeguards the west coast.

6.9.11. HANSA- 3 (NG)

CSIR (Council of Scientific and Industrial Research)-National Aerospace Laboratories (NAL) signs **technology transfer** deal with a private firm to manufacture HANSA trainer-planes.

- This would be the **first time** an aircraft is manufactured in India based on **technology fully designed** and **developed indigenously.**

About HANSA- 3 (NG)

- **Key Features**
  - Powered by an advanced fuel-efficient **Rotax 912 iSc3 Sports engine.**
  - **Range** of **620 nautical miles**, **7 hours of endurance**, and a maximum cruise speed of **98 Knots Calibrated Airspeed (KCAS).**
- **Significance:** Offers Large and world-class flying training ecosystem; strengthen India's aviation industry, etc.

6.9.12. NUCLEAR ENERGY MISSION

Union Finance Minister announced a dedicated **Nuclear Energy Mission** in the Union Budget 2025-26.

About the Nuclear Energy Mission

- **Target:** To achieve **100 GW** of nuclear power capacity by **2047**, aligning with its long-term energy transition strategy and broader **"Viksit Bharat"** vision.
  - The government plans to increase this to **22,480 MW by 2031-32.**
- **Aim:** For research and development of **small modular reactors (SMRs)** and setting up of at least five SMRs by 2033.

PT 365 - Updated Classroom Study Material

- **Indigenous Technology Development**: The mission emphasizes the development of **Bharat Small Reactors (BSRs)**, which are compact 220 MW Pressurized Heavy Water Reactors (PHWRs) designed **for captive use.**

To know more about Small Modular Reactors (SMRs), refer to Article 7.1.2. Small Modular Reactors (SMRs) in PT365 Science & Technology 2025.

6.9.13. EXPERIMENTAL ADVANCED SUPERCONDUCTING TOKAMAK (EAST)

China's EAST created new record in Fusion reaction.

About EAST
- EAST maintained a **steady-state high-confinement plasma operation for 1000+ seconds** reaching a temperature of 100 million °C.
- **Objective:** Replicate the **nuclear fusion processes** that occur in the sun.

6.9.14. FUTURE CIRCULAR COLLIDER

The **Future Circular Collider project raises concerns about** monopolizing funding and restricts alternative research directions.

About Future Circular Collider

- It is an ambitious proposed successor to the **Large Hadron Collider (LHC)** at CERN.
- **Scientific Objectives**
  - **Unanswered Questions from the LHC: e.g.** what role did the Higgs boson plays in the Big Bang?
  - **Exploring Beyond the Standard Model:** The LHC has not yet detected new elementary particles beyond the Higgs boson.

6.9.15. ORGANOMETALLIC MOLECULE

Scientists have discovered the **berkelocene**, the **first organometallic molecule** to be characterized containing the heavy element berkelium.

About Organometallic molecule

- Molecules which contain a **carbon-metal bond** are known as organometallic compounds.
- They are unique because they combine the properties of both metals and organic (carbon-containing) molecules.
- **Properties:**
  - They are **sensitive and can degrade** when exposed to air or moisture.
  - These compounds can be **stable under heat**, but the exact temperature tolerance varies widely.
  - Some can **conduct electricity,** which is useful in electronic applications.
  - They often serve as **catalysts, speeding up** chemical reactions without being consumed in the process.

6.9.16. PEROVSKITE LEDS

Novel technique unearthed to enhance next-generation lighting through Perovskite Light Emitting Diodes (PeLEDs).

About Perovskite LEDs (PeLEDs)

- It combines the advantages of Organic LEDs (OLEDs) and Quantum dot LED (QLEDs), reducing their sensitivity to heat and moisture, as well as colour instability, paving the way for efficient, durable optoelectronic devices.
  - **OLEDs** are monolithic, solid-state devices that typically consist of a **series of organic thin films sandwiched between two thin-film conductive electrodes**.
  - **QLED** display technology that **utilizes quantum dots**, which are semiconductor nanocrystals, to produce vibrant and high-quality images.

6.9.17. T-800 CARBON FIBRE

Public Accounts Committee reported on the **premature closure** of the **T-800 carbon fibre** project.

About T-800 Carbon Fibre

- **T-800 carbon fibre** is crucial for **launch vehicles, spacecraft tanks, and Gaganyaan.**
- Carbon fibre (graphite fibre), is made of **thin carbon strands (5-10 microns thick).**
- **Key properties of carbon fibre:** High tensile strength and strength-to-weight ratio, high stiffness and stiffness-to-weight ratio, low density, low thermal expansion, high chemical resistance, and good electrical conductivity
- **Key Applications:** Aerospace (e.g., aircraft wings), medical devices (e.g., prosthetic limbs), defense (e.g., lightweight armor), etc.

6.9.18. BOSE METAL

Researchers Find Strong Evidence of Bose Metal in Niobium Diselenide (NbSe2).

About Bose Metal

- It is a kind of **anomalous metallic state (AMS)**. In this **Cooper pairs** are formed but don't condense into a superconductor.
  - **Cooper pairs** are coupled electrons in a superconductor that behave like bosons and condense into a collective quantum state.
- Exist in a state where **conductivity is neither infinite (like a superconductor) nor zero (like an insulator).**
- **Applications:** It helps in probing Quantum Processes.

6.9.19. SELENIUM

Indian Council of Medical Research (**ICMR**) report links high levels of selenium in wheat to hair loss.

About Selenium

- Selenium is a natural element needed in small amounts for health.
- **Harmful**: If consumed in amounts just double what the body needs.
- Selenium occurs **naturally in soil**, affecting the selenium content in plant-based foods.

6.9.20. ABEL PRIZE

Japanese mathematician **Masaki Kashiwara (78)** won the **Abel Prize**, often called the **"Nobel of Mathematics."**

- He was honored for his work in **algebraic analysis, representation theory, D-modules, and crystal bases.**

About the Abel Prize

- **Annual award** for outstanding mathematicians.
- **Named after mathematicians** Niels Henrik Abel (1802–29).
  - Abel demonstrated the **impossibility of solving the general quintic equation in radicals.**
  - He was also an innovator in the field of **elliptic functions (Abelian functions).**
- **Established** in 2002 by the Norwegian Government.

6.9.21. NATIONAL INNOVATION CHALLENGE FOR DRONE APPLICATION AND RESEARCH (NIDAR)

The MeitY, in collaboration with **the Drone Federation India (DFI),** launched the **NIDAR** under the SwaYaan initiative.

- NIDAR aims to inspire and engage India's student and research communities **to develop collaborative autonomous drones, addressing real-world challenges in the field of Disaster Management and Precision Agriculture.**

About SwaYaan

- Approved by **MeitY in 2022**.
- Focuses on **capacity building for human resource development** in Unmanned Aircraft Systems (UAS), including drones and related technologies

6.9.22. EARTH'S POLAR ORBIT

This Mission titled **"Fram2" launched** by Dragon spacecraft of SpaceX is **a First human spaceflight to cruise directly over Earth's polar orbit**

About Earth's polar orbit

- A polar orbit is when a satellite orbits Earth by **passing over the North and South Poles.**
  - A deviation of **10 degrees over north and south poles** is still classified as a **polar orbit.**
- **Height:** A **type of low Earth orbit**, typically between 200 to 1000 km in altitude.
- **Significance:** A spacecraft orbiting over the poles can **observe the entire planet as it spins underneath.**
  - The path is particularly **useful for weather, mapping and spy satellites.**
- **Issue:** Launching rocket into polar orbits **requires greater fuel** since rockets cannot harness Earth's rotational speed.

6.9.23. PROJECT WATERWORTH

Meta has introduced its world's longest undersea cable system - Project Waterworth.

About Project Waterworth

- **Length**: 50,000 km subsea cable will **connect five continents**.
- **Depth**: Cable will reach **depths of up to 7,000 meters** in deep waters.
- **Significance:** Strengthen scale and reliability of world's digital highways

6.9.24. JAGADISH CHANDRA BOSE

Anusandhan National Research Foundation (ANRF) has announced the launch of the **J. C. Bose Grant (JBG)**, a new scheme, to recognize contributions of senior Indian scientists.

About Jagadish Chandra Bose (1858 - 1937)

Jagadish Chandra Bose

- He was the **first Asian to be awarded a** US patent in 1904**.**
- He investigated of **radio microwave optics** and considered as the father of radio and wireless communication.
- **Key contributions**
  - He was the first person to prove that plants also have the ability to feel pain and affection.
  - **Key Inventions:**
    - **Cresco graph**, used for measuring the growth in trees.
    - Invented **first wireless detection devices.**
  - He founded the **Bose Institute,** a premier research institute in 1917.
  - He is **considered the father of** Bengali science fiction.
  - **Key Literary work:** science paper "On the Similarity of Responses in Inorganic and Living Matter", "The Nervous Mechanism of Plants", and Niruddesher Kahini (The Story of the Missing One).
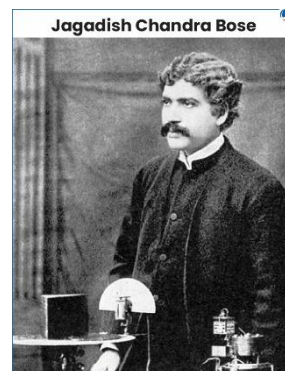
6.10. KEY CONCEPTS/TERMS IN NEWS

6.10.1. TOXIC MALE TECHNIQUE

A new study by **researchers** has suggested that the **toxic male technique** could be used to address the prevalence of mosquito-borne illness.

- This Technique has been tested on male fruit flies.
- As per study, the toxic male technique could reduce rates of blood feeding by **40% to 60%.**
- **Only female mosquitoes** are blood feeders.

About Technique

- In this, **genetically engineering males** produce **venomous proteins** in their semen while mating, which they **inject** into **females**.
- This reduces the lifespan of females

6.10.2. SMALL LANGUAGE MODEL (SLM)

Microsoft Research has introduced a new "1-bit" Small language model with a two-billion parameter scale that can run on a CPU.

About Small Language Model (SLMs)

- They are designed to perform some of the same natural language processing tasks as their larger, better-**known large language model (LLM) counterparts**, but on a smaller scale.
  - They're built with fewer parameters and **simpler neural network architectures,** which allows them to operate with less computational power while still providing valuable functionality in specialized applications.
- **Advantages over LLMs:** Lower computational requirements, decreased training time, reduced energy consumption etc.
- **Limitations:** Limited capacity for complex language and reduced accuracy in complex task.

6.10.3. AI WASHING

Venture capitalists are concerned about **AI washing used by startups** to secure funding.

About AI Washing

- AI washing is the **practice of overstating or misrepresenting the use of AI** in products, services or business strategies.
- AI washing takes its name from **greenwashing**.
- **Examples:** Mislabelling automation as AI, Superficial AI claims, using buzzwords phrases like "AI-driven" etc.

6.10.4. JEVONS PARADOX

Recently, Microsoft CEO highlighted **Jevons Paradox** in the backdrop of increased adoption of the AI systems globally.

About Jevons Paradox

- It is the **idea** that technological progress that makes a resource cheaper or more efficient to use often leads to an **increase in demand for that resource.**
- **Background:** William Stanley Jevons first described a paradox in 1865 where he maintained that **more efficient steam engines** would not decrease the use of coal in British factories but would a**ctually increase it.**

6.10.5. PHOTONIC CHIP

Government of India is supporting Photonic Chip Research for Next-Gen Computing.

About photonic chip

- **Concept**: A photonic chip is similar to an electronic chip but uses light (photons) instead of electricity (electrons).

PT 365 - Updated Classroom Study Material

- **Components:** Instead of resistors and transistors, PICs have optical components like waveguides, lasers, and polarizers.
- **Significance:** Transmit data at ultra-high speed, high bandwidth, generate minimal heat etc.

6.10.6. Q-SHIELD

Startup QNu Labs launches world's 1st unique platform Q-Shield.

About Q-Shield

- **Concept**: It enables seamless cryptography management across any environment, including cloud, on-premises, or hybrid.
- **Significance:** It provides an end-to-end solution for securing sensitive data in transit and at rest.

6.10.7. EINSTEIN RING

European Space Agency's Euclid space telescope has recently discovered **Einstein ring** named **NGC 6505**.

About Einstein Ring

- It is a **ring of light, first discovered in 1987,** around a form of **dark matter, galaxy or cluster of galaxies.**
- It is an example of **strong gravitational lensing**.
- Gravitational effects associated with Einstein Ring can help in studying **expansion of the Universe, detect the effects of invisible dark matter and dark energy**, etc.

6.10.8. MATTER-ANTIMATTER ASYMMETRY

CERN's Large Hadron Collider beauty (LHCb) experiment has confirmed **Charge-Parity (CP) violation in baryons** - particles that make up atomic nuclei, including protons and neutrons.

About Asymmetry

- Particles and anti-particles are like perfect mirror images of one another but some particles disobey this symmetry in a phenomenon known as **CP violation.**
- Matter and antimatter particles (same mass as matter but opposite electric charge) are **always produced as a pair.**
  - If they come in contact, they annihilate one another, leaving behind pure energy.
- After the Big Bang, a **tiny portion of matter survived**, creating all visible matter in today's universe.

6.10.9. ACCRETION DISK

NASA's James Webb Space Telescope observed a constant flickering of light from the Accretion Disk.

About Accretion Disk

- **Definition**: A **swirling disk of gas** around a black hole, acting as its primary light source.
- **Formation & Structure**: Forms as **black holes consume matter** (accretion) from nearby stars or interstellar gas, creating a hot, bright, and rapidly spinning disk where gas moves inward toward the event horizon.

6.10.10. QUIPU SUPERSTRUCTURE

Astronomers identified the largest known structure in the universe, named Quipu.

About Quipu Superstructure

- **This superstructure** has mass of **200** quadrillion solar masses and stretches over 1.3 billion light-years.
- **Superstructures**: Extremely large structures containing groups of galaxy clusters and superclusters.
- **Effects of Superstructures:** Cause fluctuations in the **Cosmic Microwave Background (CMB**), Distort sky images due to gravitational lensing (GL), etc.

6.10.11. YAMANAKA FACTORS

OpenAI has ventured into **protein engineering by** developing a model—**GPT-4b micro** which enhances **Yamanaka factors.**

About Yamanaka Factors

- **Yamanaka Factors are four specific proteins:** Oct4, Sox2, Klf4, and c-Myc.
  - These factors ar**e transcription factors that** regulate gene expression and **can reprogram somatic (adult) cells** into **induced pluripotent stem cells (iPSCs).**
- **Applications:** Regenerative Medicine, Drug Testing, etc.
- **Discovery & Recognition**: Identified in **2006 by Shinya Yamanaka;** Awarded the **2012 Nobel Prize in Physiology or Medicine.**

6.10.12. LIGHT SUPERSOLID

For the first time scientists of Italy's National Research Council have **made supersolid from light.**

- The new research used a **novel mechanism** that relies on the properties of **"polariton" systems**.
  - **Polaritons** are formed by **coupling light and quasiparticles like excitons** through strong electromagnetic interactions

About Supersolid

- **Definition:** It is a **rare state of matter** that **exhibits both solid-like structure and frictionless flow.**
  - It is **defined by quantum mechanics** where **particles condense into an orderly, crystalline solid** but **also move like a liquid** that has no viscosity (thus, zero friction exist in their movement).
- **Supersolid light** could play a **crucial role in developing more stable quantum bits (qubits)**.
- This will **revolutionize optical devices, photonic circuits,** and **even fundamental quantum mechanics research.**

6.10.13. ALTERMAGNETISM

Researchers in **Sweden** have reported a new type of **magnetism,** called **altermagnetism.**

About Altermagnetism

- **Meaning:** It **combines the favorable properties** of ferromagnets and antiferromagnets in one material.
  - Conventional magnets like iron, nickel etc., rely on aligned spins to deliver the push-and-pull force, while antiferromagnets cancel these forces.
- Altermagnets embody **dual nature** with **zero net magnetization** (antiferromagnets) and **non-relativistic spin splitting** (ferromagnets).
- **Applications:** Increase **memory device operation speeds**, enhance the efficiency and performance of electronic systems, etc.

6.10.14. PLASTIC ICE VII

Scientists have confirmed a fourth form of water called Plastic Ice VII using advanced neutron-scattering experiments.

About Plastic Ice VII

- It is an unusual phase of ice that forms at high temperature and high pressure and changes our understanding of water in space.
- **Formation**: >3 gigapascals (Pressure) and >450 Kelvin (Temperature)
- This phase allows water molecules to rotate freely within a rigid crystalline structure.
- **Importance of the discovery**
  - **Planetary Science:** Behavior of Plastic Ice VII can help simulate interiors of ocean worlds and exoplanets.

- o **Exoplanet Habitability:** Its ability to transport nutrients in deep oceans may influence the potential for alien life.

6.11. SPACE RELATED MISSIONS/TELESCOPE IN NEWS

Mission/Telescope	Key Details
Lunar Trailblazer Mission	**Objective:** It will orbit at an altitude of **roughly 100 km** and collect **high-resolution images** of **targeted areas** to determine the **form, distribution** and **abundance** of water**.** **Agency: NASA**
Global Astrometric Interferometer for Astrophysics (GAIA)	**Objective:** Designed for **astrometry (**the science of mapping the cosmos) through precise measurement of the location and movement of **stars and other celestial bodies** **Agency: European Space Agency (ESA)**
Biomass (satellite)	**Objective:** Map the **world's forests** to provide the very **first comprehensive measurements of forest** biomass and stored carbon at a global scale. - It is the **first satellite to carry a P-band** SAR (Synthetic Aperture Radar) **Agency: ESA**
Euclid Telescope	**Objectives:** Study the Universe's evolution over the past 10 billion years, revealing how it expanded and formed structures, and providing insights into dark energy, dark matter, and gravity. **Agency: ESA**
SPHEREx Space Telescope (Observatory)	- It stands for **Spectro-Photometer for the History of the Universe, Epoch of Reionization and Ices Explorer**. **Objective:** Survey the sky in **optical & near-infrared light**. **Agency: NASA**

6.12. MISSILE/DEFENCE SYSTEMS/WEAPONS IN NEWS

Missile/Defence system	Details/Features
Mk-II (A) DEW system	- DRDO successfully conducted a trial of a Mk-II(A) LASER- Directed Energy Weapon (DEW) system at the National Open-Air Range (NOAR) in Kurnool district of Andhra Pradesh. - India became the **fourth country** in the world, after the **US, China, and Russia** who possess advanced LASER weapon capabilities. **About Mk-II(A) DEW system** **Developed by:** Indigenously by DRDO's Centre for High Energy Systems and Sciences (CHESS), Hyderabad. **Mechanism:** Once detected by a radar or inbuilt Electro Optic (EO) system, it engages targets and uses an intense **high-energy 30-kilowatt LASER Beam** to cut through the target, leading to structural failure. **Characteristics:** Lightning speed of engagement, precision, and can have lethality delivered to the target within a few seconds.
Nag Missile System (NAMIS)	- Developed by **Defence Research & Development Laboratory** of DRDO. - It is one of the most sophisticated **anti-tank weapon systems with** fire-and-forget anti-tank missiles and sighting systems for enhanced firepower and lethality.

Ashwini	• **Indigenously** developed by **Electronics & Radar Development Establishment, DRDO.** • **Key Features:** Capable of **tracking aerial targets** from **high-speed** fighter aircraft to **slow moving targets** such as Unmanned Aerial Vehicles and helicopters.
Sonic Weapon (or Acoustic weapons)	• **It delivers** very loud sounds over long distances. o It can also be used to act like voice amplifiers to deliver voice messages/other sounds. • **Impact: Tinnitus** (perception of ringing, buzzing, or other sounds in ears **without an external source**); hearing loss etc.
Missile Gandiva	• It is next in line of the Astra series, building upon the success of its **predecessors, the Astra MK-1 and MK-2.** • **Propulsion System:** It is powered by a **Solid Fuel Ducted Ramjet propulsion system**. • **Speed**: It can sustain supersonic speeds, reportedly up to **Mach 4.5,** over extended **ranges of 300–350 kilometres.**
Golden Dome	• **A missile defence programme** of the **USA.** • **Inspired** from **Israel's 'Iron Dome' missile defence system.**
Gaurav	• It is a Long-Range Glide Bomb • Gaurav achieved 100 km range with pinpoint accuracy.
Typhon mid-range missile system	• **It is US army's Strategic Mid-Range Fires (SMRF).** • **Missiles:** Can launch both **Standard Missile 6** (**SM-6)** missiles and Tomahawk cruise missiles.

6.13. UPDATES

6.13.1. INDIAAI MISSION

Key Initiatives have been recently launched under the Mission

- **AIKosha (IndiaAI Datasets Platform):** A secured **repository of datasets, AI models, etc**.
- **IndiaAI Compute Portal:** Provides **subsidized AI compute, storage, and network services** with access to 10,000+ **graphics processing units (GPUs)**.
- **AI Competency Framework:** Equips **public sector officials with AI skills** and competency mapping.
- **iGOT-AI for Government Officials:** AI-powered personalized learning on the **iGOT Karmayogi platform.**
- **Other Initiatives:** IndiaAI Start-ups Global Acceleration Program, IndiaAI Innovation Challenge, and IndiaAI FutureSkills Fellowship

6.13.2. SEMI CRYOGENIC ENGINE

ISRO has successfully conducted the second short hot test of the semi-cryogenic engine.

- It will power the **Semi cryogenic booster stage** of the Launch Vehicle Mark-3 (LVM3).

PT 365 - Updated Classroom Study Material

6.13.3. CHANDRAYAAN-3

Researchers from ISRO (among others) created **the first detailed lunar map** using data from **the Pragyan rover.**

Key Findings:

- **Confirmation of Subsurface Magma Ocean**: Findings confirms ancient ocean of molten lava that extends **across the entire moon**.
- **A Common Origin with Earth**: The Moon's geochemical similarities with Earth supports the theory that both **bodies originated from the same molten material.**

6.13.4. BRAHMOS NG (NEXT GENERATION)

BrahMos NG missile's maiden flight test set for 2026, production to begin by 2027-28.

About BrahMos NG (Next Generation)

- **Type:** It is a lighter, smaller, and more versatile and lethal version of the existing BrahMos missile.
- **Capability:** Speed of Mach 3.5 and a range of 290 km (extendable to 450 km).

7. CULTURE

7.1. UNESCO WORLD HERITAGE SITES

Why in the News?

Six sites have been added to **India's Tentative List by UNESCO's World Heritage Centre** in 2025.

More on the News

- These sites include (details of these sites have been given in the subsequent articles):
  - **Gupta Temples in North India**
  - **Chausath Yogini Temples**
  - **The Palace-Fortresses of the Bundelas**
  - **Ashokan Edict Sites along the Mauryan Routes**
  - **Kanger Valley National Park**
  - **Mudumal Megalithic Menhirs of Telangana**
- A tentative list is an **"inventory" of properties** a country believes **deserves to be a World Heritage Site.**
  - Before a site can be inscribed in the UNESCO World Heritage List, it **must first be included in a country's Tentative List.**
- **Process**: After inclusion in Tentative List, the country has to prepare a **nomination document** that will be considered by **UNESCO World Heritage Committee**.
  - In **India**, **Indian National Commission for Co-operation with UNESCO (INCCU),** and **Archaeological Survey of India (ASI)** play a key role in this regard.
- **In India, 62 sites** are listed on UNESCO's **Tentative List**.

Note: Refer 'Appendix 6' in the PT365 Culture (April to October 2024) to know the locations of all 43 World Heritage Sites of India.

7.1.1. GUPTA TEMPLES IN NORTH INDIA

- **Gupta Empire (c. 320–550 CE)**: Known as the "**Golden Age" of classical India**.
  - Temple architecture included **Nagara (North Indian) and Dravida (South Indian) styles**.
  - Temples evolved from modest flat-roofed shrines to **complexes with garbhagrihas, mandapas, mukhmandapas, and śikharas.**
  - **Royal patronage: Vishnu, Shiva, and Shakti**.
- **Key Features**: I**nfluenced by Buddhist and Hindu traditions.**
  - Shift to stone and brick from wood.
  - **Emergence of 5 typologies**: flat-roofed square temples, square temples with ambulatory, barrel-vaulted shrines, temples with curvilinear śikharas, and circular/octagonal temples.
  - **Introduction of "vase capital"** (purnakalsa) in pillars, replacing earlier Mauryan styles.
  - Use of **terraced platforms and intricate decorations**.
- **Socio-economic Impact**: Land grants (Devadana), agrarian management, trade routes like uttarāpatha, urbanization, and rise of specialized labour guilds.

Important Gupta Temples

Dashavatara Temple, Deogarh (Uttar Pradesh)

- **Late Gupta Period type** of temple built in early **6th century CE.**
- **Betwa River** which encircles it from three sides.
- It gets its name from **10 incarnations of Lord Vishnu depicted** on the temple.
- It **pioneered Shikhara form**, symbolizing **Mount Meru** as the cosmic axis.
- The tall **curving latina or rekha-prasada type** of shikhara indicates that it is an early example of **Nagara style** of temples.

Dasavatara Vishnu Temple, Deogarh

- It showcases **Panchayatana style of architecture** i.e. the main shrine is built on a rectangular plinth with 4 smaller subsidiary shrines at the 4 corners.

Bhitargaon Temple, Kanpur (Uttar Pradesh)

- It is an **east-facing terraced brick temple** built in 5th century.
- A key feature is brick engineering adapted to sacred geometry.
- The temple is **square in plan** and has an *ardhamandapa*, *antarala* and *garbhagriha*.

Bhitargaon temple

Nachna temple, Panna (Madhya Pradesh)

- Built in the **5th-6th century CE**, it is a temple dedicated to **Shiva**.
- Popularly known as **Parvati temple**, it showcases a **mix of Nagara and Dravida architectural elements**.

Other Gupta Temples

- **Madhya Pradesh:** Vamana temple, Deori; Cave No. 1, **Udayagiri;** Temple No. 17, Gupta Temple in **Sanchi**
- **Bihar**: Terraced brick temple, **Lauriya- Nandangarh;** Gupta temples at **Nalanda Mahavihara; Mundeshwari temple, Ramgarh (**Built of **sandstone** with an **octagonal plan); Mahabodhi Temple, Bodhgaya**
- **Uttar Pradesh:** Bhitari temple

Rajasthan: Bhim-ki-chauri (Dara)

Shiva Temple, Nachna-Kuthara, Madhya Pradesh

7.1.2. CHAUSATH YOGINI TEMPLES

- **Yogini Temples**: Temples have **64 chambers with images of Yoginis** (female yoga practitioners; *chausath* means 64).
  - Open central courtyard with a **shrine to Lord Shiva/Shakti**, visible from all chambers; dancers likely performed here.
- **Key Features**: **Typically circular**, built on elevated ground and open to the sky; Khajuraho, Badoh, and Rikhiyan temples are **rectangular**.
  - **Circular plan symbolizes time cycle**, cosmic order, and continuous energy flow.
  - Stone load-bearing structures with modest main carvings and intricately carved sculptures.
  - **Centres for Tantric and Yogic practices celebrating** feminine power, sensuality, and fertility.

Chausath Yogini Temples in India:

- **Chausath Yogini Temple, Morena, MP (Ekattarso Mahadeva Temple)**
  - It is a circular temple constructed by **Maharaja Devapala of Kachchhapaghata dynasty** in 1323 A.D.
  - Constructed using local sandstone.
  - Popularly believed to have **inspired design of the old Indian Parliament.**
  - Circular layout is believed to be a **representation of the Sri Yantra**, a sacred geometric diagram in Hinduism that symbolizes **cosmos and divine feminine energy (Shakti).**

Chausath Yogini Temple, Morena

- **Chausath Yogini Temple, Khajuraho, MP (Constructed in 9th century under patronage of Chandela dynasty)**
  - The **Khajuraho temple** is the most **primitive** in construction and unique with its **rectangular form**.
  - It is completely made of locally found coarse granite stone.
- **Chausath Yogini temple, Badoh, MP (Gadarmal temple)**
  - It consists of a **rectangular shrine** surmounted by a **massive *shikhara***, with a small porch in front.
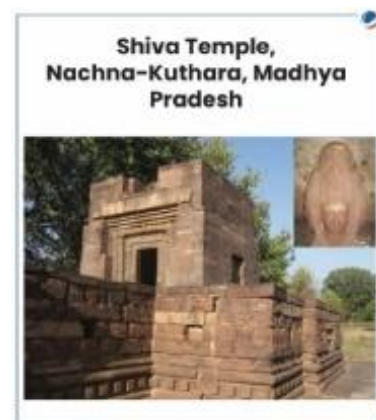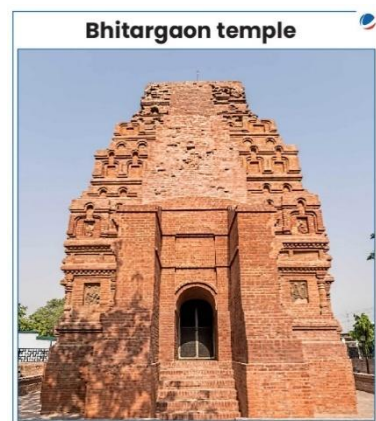
o The **roof** above this temple was **added later** and originally the Badoh temple must have been hypaethral (having no roof) like the other Yogini shrines.
- **Others**:
  o **Madhya Pradesh:** DudhaiJabalpur, Hinglajgarh, Shahdol, Naresar;
  o **Uttar Pradesh:** Lakheri, Rikhiyan;
  o **Tamil Nadu:** Kanchipuram;
  o **Odisha:** Hirapur, Ranipur;

7.1.3. THE PALACE-FORTRESSES OF THE BUNDELAS

- Palace-Fortresses of the Bundelas consist of 6 significant components located in the **Bundelkhand region**, namely:
  o **Garhkundar Fort:** Located in **Garhkundar**, **early capital** of Bundela Rajputs.
  o **Raja Mahal (Orchha):** Commissioned during reign of Bundela ruler **Madhukar Shah**.
    > Capital was **shifted to Orchha** in **16ᵗʰ century**.
  o **Jahangir Mahal (Orchha):** Commissioned during reign of **Madhukar Shah** and saw major construction from the reign of **Bir Singh Deo**.
  o **Datia Palace**: Known as the **Bir Singh Deo Palace**, it is a five-storied structure built by **Bir Singh Deo** in 1620.
  o **Jhansi Fort**: Built by **Bir Singh Deo** in the **early 17th century.**
  o **Dhubela Palace**: Built by **Maharaja Chhatrasal** in the 17th century and is strategically located near the Dhubela Lake.
- **Key features of Bundela Palace-Fortresses**
  o **Synthesis of Bundela Rajput (Chhatris, intricate carvings) and Mughal style (ogee arches, domes, etc.).**
  o **Local reinterpretation of Mughal motifs**, **murals** like **ragamala and raslila.**
  o **Integration of Defence and aesthetics**: Advanced fortification strategies with aesthetics in form of chhatris, ornamental domes, and arched windows.
  o **Architecture**: Mandala form of symmetrical planning with central, open-to-sky courtyard.
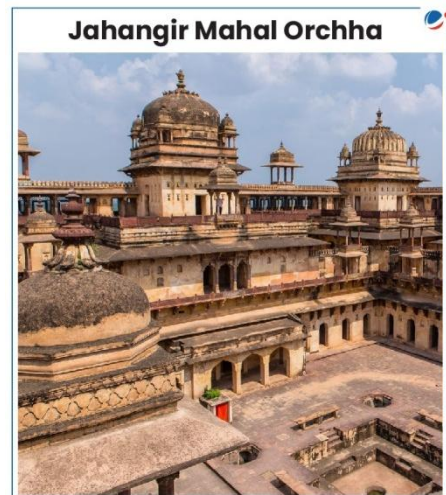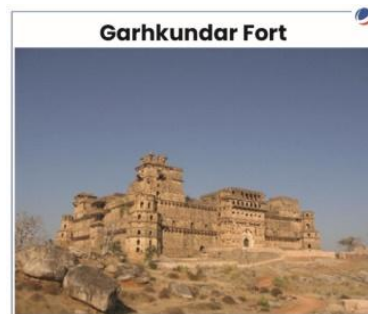
About Bundelas

- Bundelas belonged to **Gaharwar tribe of Rajputs**.
- **Raja Pancham** founded Bundela Kingdom (Last quarter of 12th century A.D) and made **Garhkundar their capital**, when Chandela power was in process of decline.

Garhkundar Fort

Raja Mahal Orchha

Jahangir Mahal Orchha

7.1.4. ASHOKAN EDICT SITES ALONG THE MAURYAN ROUTES

- These include **Major Rock Edicts, Minor Rock Edicts, Pillar Edicts, and Other Edicts and Cave Inscriptions**.
- **Period:** Collection of more than 30 **inscriptions on rocks, pillars, boulders, and cave walls**, made by **Emperor Ashoka** of **Mauryan Empire** during his reign, from 268 BCE to 232 BCE.
  o They are the **first written inscriptions in India** following decline of **Harappan** civilization.
  o There are **14 Major Rock Edicts, seven Pillar Edicts and some Minor Rock Inscriptions** to his credit.
- **Purpose:** His inscriptions were **royal decrees**, **pertaining to social, cultural and administrative matters**.
- **Language**: Primarily Prakrit, with Aramaic and Greek in northwestern region.
- **Script**: Brahmi (Main Script), Kharoshti (Used in Gandharan Region), Greek and Aramaic.

- **Materials**: Pillars were made from buff-colored hard sandstone from Chunar and spotted red and white sandstone from Mathura.

Note: Refer 'Appendix 4' in the PT365 Culture (April to October 2024) to know more about the Ashokan Edicts.
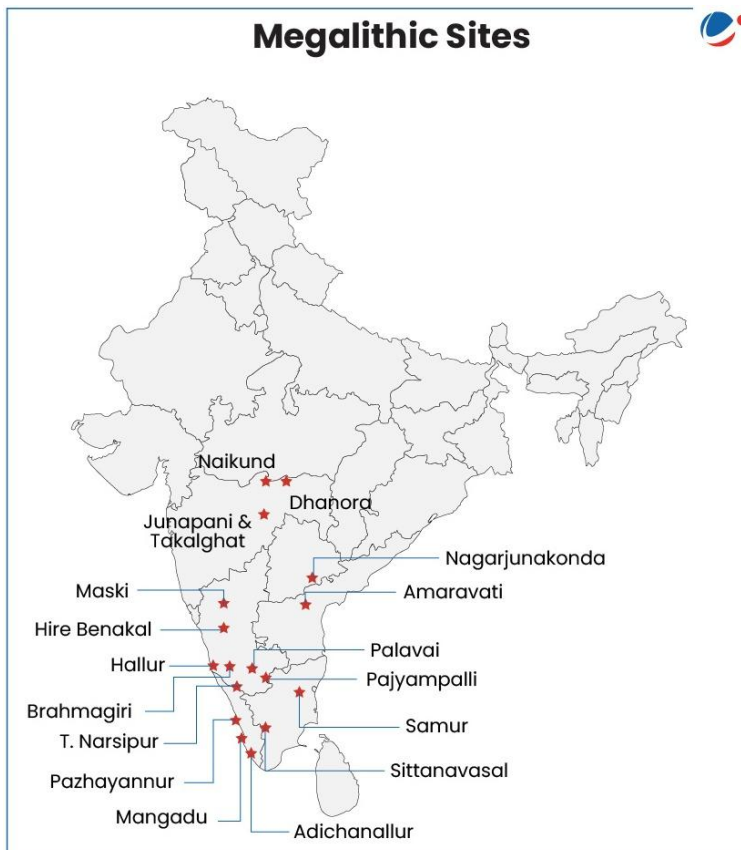
7.1.5. KANGER VALLEY NATIONAL PARK

- **Location:** Part of **Deccan peninsula - Eastern Highlands** in Bastar District, Chhattisgarh.
- **Established:** Designated as National Park (NP) in **1982** under Wildlife Protection Act, 1972.
- **Key Features:**
  - **Major River flowing through NP**: Kanger River.
  - **Location: Kholaba River** (A tributary of the Godavari River).
  - **Vegetation**: It supports **distinct vegetation types** in close vicinity of each other viz., Tropical Moist Deciduous, Tropical Dry Deciduous and Tropical Semi-Evergreen Forests.
    > It forms a **natural transition zone (ecotone** region) between **Sal** and **teak** forests in **Peninsular India**.
  - **Geomorphological features:**
    > **Karst Topography**: Include **subterranean (underground) limestone caves** with Speleothems.
    > Three exceptional caves i.e. **Kutumbasar, Kailash and Dandak** which are famous for their **Stalactites and stalagmites.**
  - **Other attractions:** Tirathgarh waterfall, Kanger Dhara waterfall (Formed by a **tectonic event)**
  - **Major fauna**: Panthers, striped hyenas and Dholes; **Eastern Hill Myna** (State Bird of Chhattisgarh), **giant squirrel** (a species found only in this region) etc.

High degree of endemism: The limestone caves are home to 5 spider species that can only be found in this NP.

7.1.6. MUDUMAL MEGALITHIC MENHIRS OF TELANGANA

- It represents one of India's most expansive and impeccably preserved **megalithic astronomical observatory sites**.
- **Time Period:** Approximately **3500-4000 years old.**
- **Location:** Near the banks of **Krishna River** in **Telangana**.
- **Key Features**
  - Considered **largest megalithic burial site in South India**.
  - **Depiction of Night Sky:** Only site in South Asia featuring **representations of night sky** i.e. Tangible depictions of **Ursa Major**, **Leo constellations** etc.
  - **Ancient Observatory**: **Menhirs (Upright Stones)** are aligned with celestial events e.g. **solstices, equinoxes etc.**
  - **Cultural Significance**: Menhirs are considered sacred by local population, who refer to them as ***"Niluralla Thimmappa"*** **(Thimmappa of the Standing Stones),** with one particular menhir being worshipped as **Goddess Yellamma**

Megalithic Sites

Naikund
Dhanora
Junapani & Takalghat
Nagarjunakonda
Maski
Amaravati
Hire Benakal
Palavai
Hallur
Pajyampalli
Brahmagiri
Samur
T. Narsipur
Sittanavasal
Pazhayannur
Mangadu
Adichanallur

7.1.7. UNESCO'S MEMORY OF THE WORLD REGISTER

Why in the News?

Bhagavad Gita and Natyashastra have been inscribed in UNESCO's Memory of the World Register. With these inclusions, India now has 14 entries in the Register.

- Previously, India's **Rig Veda, Gilgit Manuscript, Manuscripts of Abhinavagupta (940-1015 CE), Maitreyayvarakarana,** (a manuscript of the Pala period) etc. have also been included in the Register.
- **Universal Declaration of Human Rights,** proclaimed by the **United Nations General Assembly** in Paris in 1948, is also among the **new entries in the Register.**

About the Inscriptions

- **Bhagavad Gita**
  o Part of the Mahabharata, specifically within the **Bhīṣmaparva (Chapters 23–40).**
  o Structured as a **dialogue between Lord Krishna and Arjuna** on the battlefield of Kurukshetra.
    > It is considered to be composed in the 2nd or 1st century BCE.
  o Comprises of **700 verses** across **18 chapters**.
  o **Relevance:** Considered a guide to living a meaningful and purposeful life.
- **Natyashastra**
  o Considered the essence of **Nāṭyaveda** — an oral tradition of performing arts comprising 36,000 verses, also known as the **Gāndharvaveda**.
    > It deals with **drama (nāṭya), performance (abhinaya), aesthetic emotion (rasa), feeling (bhāva), and music (saṅgīta)**.
  o Believed to have been codified around the **2nd century BCE** by **Bharatmuni** in Sanskrit.
  o Laid the foundation of Indian poetics, theatre, dance, and aesthetics.

> **UNESCO's Memory of the World Programme**
>
> - **Launched in 1992** to **preserve and provide access to documentary heritage** of outstanding universal value.
> - Recognises **documentary heritage** that has influenced human civilisation.
> - Aims to **preserve and promote access** to historical texts, manuscripts, and archives.

7.2. KALYANA CHALUKYA-ERA KANNADA INSCRIPTIONS

Why in the News?

Three rare Kalyana Chalukya-Era Kannada inscriptions dated 1129 CE, 1130 CE, and 1132 CE have been discovered in **Telangana**.

More on the Inscriptions

- The inscriptions date back to the reign of **Emperor Someswara III Bhulokamalladeva** of the Kalyana Chalukya dynasty.
- **The first inscription** details the construction of the **Bijjeswara temple** and donations made by a local village chief.
- The **second** and **third** inscriptions record donations made to the temple.

About Kalyana Chalukya (or Later/western Chalukyas)

- Later Chalukyas are considered descendants of the **Chalukyas of Badami. Taila II** was the first king. He **defeated Rajaraja Chola** in 992 A.D
- They ruled the Deccan region from **973-1180 AD. Kalyan** (Bidar district in Karnataka) was their **capital**.

CHALUKYA DYNASTY
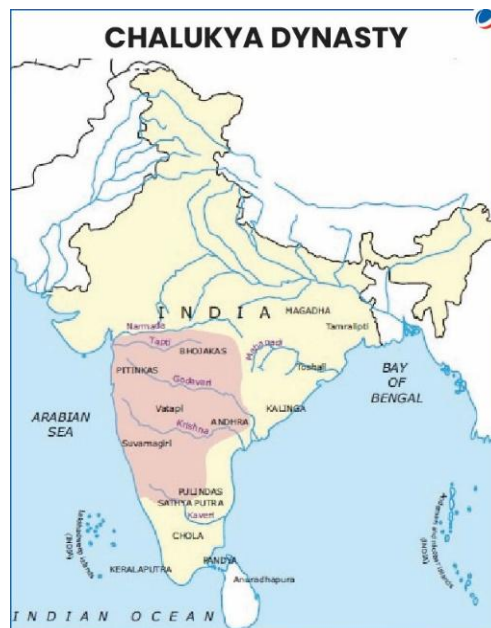
**Art and Culture of Kalyana Chalukya**

- **Architecture**
  - **Major Temples: Kasi Vishveshvara** at Lakkundi, **Mallikarjuna** at Kuruvatii, **Kalleshwara temple** at Bagali and **Mahádeva** at Itagi.
  - **Stepped wells**: Kalyana Chalukya also known for ornate **stepped wells (Pushkarni)** which functioned as **ritual bathing places**. e.g., **Manikesvara Temple** in Lakkundi.
- **Literature:**
  - **Sanskrit and Kannada literature** flourished during this period.
  - The literary luminaries of Kannada during this period were **Pampa, Ranna, Durgasimha, Nagavarma etc.**
- **Religion:**
  - **Various sects** of **Saivism,** which were prevalent during this period such as **Pashupata, Lakulisa & Kalamukha .**
  - The period also marked the advent of a new **social & religious movement** under the leadership of **Basavanna**.

Related News: Somnath Temple

Prime Minister offered prayers at Somnath temple.

About Somnath Temple

- **Location**: **Prabhas Patan** near Triveni sangam (the confluence of three rivers **— Kapila, Hiran and Sarasvati)** in Saurashtra, Gujarat.
- **History**: The temple, destroyed multiple times by invaders, first in 1297 by Mahmud of Ghazni.
- **Architecture**: Present temple is in **Chalukya style of Hindu temple architecture**, last rebuilt in 1951.
- **Religious Significance**: First among the twelve jyotirlinga shrines of Lord Shiva.
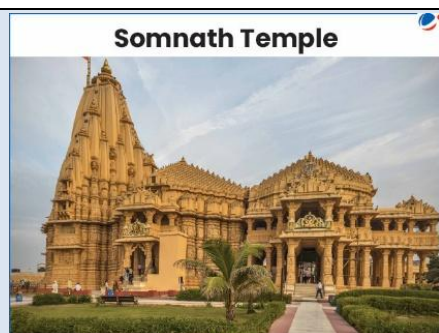
7.3. CHITTORGARH FORT

Why in the News?

Rajasthan government told the Supreme Court it is considering a **total mining ban within 10 km of Chittorgarh Fort.**

About Chittorgarh Fort

- **Located:** In Rajasthan
- Built by a local Mori Rajput ruler **Chitrangada Mori** in the **7th century.**
- **Historic Significance**
  - It served as the **capital of the kingdom of Mewar**.
  - As per **Malik Muhammad Jayasi's poem, Padmavat, Alauddin Khilji** invaded Chittorgarh Fort to **capture Ratnasimha's queen, Padmini.**
  - Rani Padmini committed mass **jauhar (self-immolation)** along with other women to safeguard their honour.
- **Cultural Significance:** Declared a **UNESCO World Heritage Site in 2013** under the **Hill Forts of Rajasthan.**

Abour Mewar Kingdom

- **Established**: Around the **6th century CE by the Guhila dynasty**, with **Bappa Rawal (8th century) as a pivotal early ruler.** From 14th century onwards **Sisodiya dynasty** came to rule Mewar**.**
- **Location**: South-central Rajasthan, encompassing regions around Udaipur, Chittorgarh, Bhilwara, and Rajsamand.
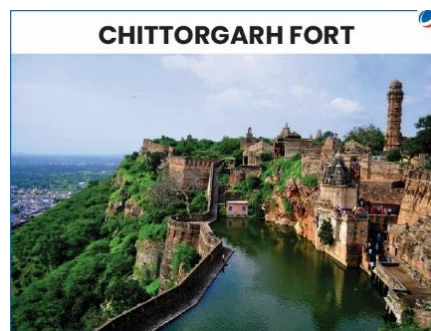
- **Other Prominent Rulers & Their Contributions**
  - **Rana Kumbha (1433–1468):** Built **Kumbhalgarh Fort (UNESCO World Heritage Site)** and 32 other fortresses; **defeated the Sultanates of Malwa and Gujarat**.
  - **Rana Sanga (1509–1528):** United Rajput clans against Mughal emperor Babur; fought the **Battle of Khanwa (1527)** but was defeated.
  - **Rana Pratap (1572–1597):** Icon of Rajput resistance against Akbar's Mughal Empire; fought the **Battle of Haldighati (1576);** reclaimed parts of Mewar through **guerrilla tactics.**

7.4. HISTORICAL EVENTS IN NEWS

7.4.1. BATTLE OF KARNAL

Battle of Karnal (February 24, 1739) that shaped the political landscape of the subcontinent was remembered.

About the Battle of Karnal

- Fought between **Nadir Shah, ruler of Afsharid Persia** and the **Mughal Empire led by Emperor Muhammad Shah**.
- **Outcome**: **Mughal forces were defeated** and Emperor Muhammad Shah was taken captive by Nader Shah, marking a significant blow to the Mughal Empire's authority and prestige.
  - **Nadir Shah sacked Agra and Delhi** and carried the **Peacock Throne and the Koh-i-Noor to Persia**.
- **Significance:** Highlighted the **growing influence of external powers** and the weakening grip of the Mughals over their dominions.
  - It also laid the **groundwork for further invasions and foreign interventions in India**.

7.4.2. VIJAY DURG (FORT WILLIAM)

Fort William in Kolkata, the headquarters of the Eastern Army Command, was recently renamed as Vijay Durg.

About Vijay Durg

Vijay Durg (Fort William)

- It was named after **King William III** of **England.**
  - "Renaming **to 'Vijay Durg'** pays **homage to the oldest fort on Maharashtra's Sindhudurg coast**, which served as naval base during Chhatrapati Shivaji Maharaj's reign"
- It is located on the banks of the **river Hoogly**.
- **Black Hole Tragedy** took place on June 20, 1756 in Fort William.
  - **Nawab Siraj-ud-Daula** imprisoned British captives in a tiny cell overnight, causing many deaths from suffocation and extreme heat, it is known as **Black Hole Tragedy.**

7.4.3. MUZHARA MOVEMENT

Recently, the anniversary of the Muzhara movement was observed on March 19.

- Commemorated annually to observe the **violent confrontation between Muzhara (Tenant farmers) and the authorities in pre-partition state of Punjab.**

About Muzhara Movement

- **Genesis**: Originated in the erstwhile **princely state of Patiala**, gaining momentum around 1930s.
  - Had roots in the **Praja Mandal movement of 1920s**.
- **Background**: **Muzharas** of **pre-Partition Punjab** demanded land ownership rights from the **biswedari system** (rules regarding land tenancy).
  - **Biswedar (landlord)** had share in the land cultivated by the muzharas, who further paid to British causing exploitation of the peasant.
- **Notable Leaders**: Buta Singh, Kirpal Singh, etc.

7.5. GYAN BHARATAM MISSION

Why in the News?

Union Budget 2025-26 announced the **Gyan Bharatam Mission** for the survey, documentation, and conservation of India's **manuscript heritage**.

About Gyan Bharatam Mission

- **Key components:**
  - **Conservation:** To undertake the **survey, documentation and conservation** of more than **one crore manuscript** heritage lying with academic institutions, museums, libraries and private collectors.
  - **Creation of Digital Repository:** National Digital Repository of Indian knowledge systems for knowledge sharing to be created.
    - This platform will be **accessible to researchers, students, and institutions across the globe**.
- **Nodal Ministry:** Union Ministry of Culture.

Some important Manuscripts in India

Manuscripts	Author
Natyashastra	Bharata Muni
Mahabharata	Vyasa
Mahabhashya	Patanjali
Prayoga-Ratnamala Vyakarana	Purushottama Vidyavagish
Arthashastra	Chanakya
Aryabhatiya	Aryabhata
Brahmasphutasiddhanta	Brahmagupta
Sushruta Samhita	Sushruta
Ashtadhyayi	Panini
Rajatarangini	Kalhana
Gitagovinda	Jayadeva

What are Manuscripts?

- A **manuscript** is a **handwritten composition** on paper, bark, palm leaf, etc., dating back at least 75 years that has significant scientific, historical or aesthetic value.
  - E.g., **Bakhshali manuscript (Third or fourth century BCE),** an ancient Indian mathematical text written on birch bark.
    - Some study highlighted that Bakhshali Manuscript Contains **Oldest Example of Mathematical Symbol 'Zero'.**
- **Lithographs** (A techniques involving drawing on a stone and then transferring the image to paper) and printed volumes are **not manuscripts.**
- India possesses **'memory of the world' with an estimated 10 million manuscripts** in 80 ancient scripts like Brahmi, Kushan, Gaudi, Lepcha, and Maithili.
  - Of these, ~75% are in Sanskrit and 25% are in regional languages.

Other Initiatives for Manuscript Conservation
- **National Manuscripts Mission (NMM):** Launched In 2003, by the Ministry of Tourism and Culture to locate and preserve manuscripts.
- **National Library of India, Kolkata**: It has about 3600 rare and historically important manuscripts.
- **Asiatic Society of Bengal**: Founded on Jan. 15, 1784, by Sir William Jones, undertakes digitization of ancient manuscripts.
- **National Archives of India**: It is a repository of the non-current records of Government of India and possesses private papers of prominent personalities of India.

- **Indira Gandhi National Centre for the Arts**: It acts as a main resource Centre for the Indian art and culture.

7.5.1 BHARATIYA BHASHA PUSTAK SCHEME

Finance Minister has introduced **Bharatiya Bhasha Pustak Scheme** in Union Budget 2025-26.

About Bharatiya Bhasha Pustak Scheme

- **Aim:** To provide **digital form of Indian language** books **for schools and higher education** to help students understand their subjects better.
- It is aligned with **National Education Policy, 2020,** wherein students across schools and universities will get textbooks, learning materials in digital formats.
- It also **complements ASMITA** (Augmenting Study Materials in Indian Languages through Translation and Academic Writing) **initiative.**
  - It was launched by Ministry of Education and UGC in 2024 to develop 22,000 books in 22 Indian languages in next five years.

7.6 CHHATRAPATI SAMBHAJI MAHARAJ

Why in News?

Chhatrapati Sambhaji Maharaj was remembered on his death anniversary (March 11).

About Chhatrapati Sambhaji Maharaj (1657- 1689)

- He was the **eldest son of first Maratha King Chhatrapati Shivaji Maharaj** and was born on 14 May 1657 **at Purandar Fort in Pune.**
- After the **death of his father in 1680,** he became the **second ruler of the Maratha Empire (from 1681 to 1689) and** carried forward the **vision of Swarajya (self-rule).**
- He led his **first battle at Ramnagar** at the age of 16.

Chhatrapati Sambhaji Maharaj

Key Contributions

- **Military:**
  - **Against Mughals:** Sambhaji led several military campaigns including an **attack on Burhanpur (in 1681),** a major Mughal city.
    - He **resisted Mughal emperor Aurangzeb's attempt to conquer Deccan** for many years by successfully applying **Guerilla Warfare tactics**.
  - **Against Portuguese**: **Captured Portuguese strongholds in Goa**, curbing their influence and **preventing temple demolition and conversion of Hindus to Christianity.**
- **Literary:** He **was also a learned scholar and poet** and knew several languages including **Sanskrit, Marathi, Persian, Arabic, Portuguese, etc.** He composed **Budhbhushanam**, a Sanskrit political and statecraft treatise.
- He was **captured by Aurangzeb in 1689 at Sangameshwar** due to betrayal by relatives and Maratha defectors. He was tortured for around 40 days before being executed in a painful manner **for refusing to bow down before Aurangzeb and converting to Islam.**

7.7. AMMU SWAMINATHAN

Why in the News?

Smt. Ammu Swaminathan is among 15 women featured in **'The Life and Contributions of the Women Members of the Constituent Assembly'**.

- It is a tribute by the Ministry of Law & Justice to their role in drafting India's Constitution.

About Ammu Swaminathan (1894 - 1978)

- **Early Life**: Born in **Palakkad, Kerala**, and fondly called **Ammukutty**.
- **Political Career**:
  o Arrested in **Quit India Movement** (1942)
  o Elected to the **Constituent Assembly from Madras** in **1946**.
- **Key Contributions:**
  o **Defied Caste Norms**: She called herself **Shudrachi** to challenge upper-caste pride.
  o **Women's Rights**: She was believed to have **Co-founded** the **Women's India Association (WIA) in 1917** with Annie Besant to fight for economic rights and voting for women.

7.8. NEW GI TAGS

7.8.1. CHAPATA CHILLI

About Chapata Chilli (Tomato Chilli)

- **Unique Characteristics**
  o **Bright red colour** and **round shape** resembling a tomato.
  o It is **less spicy** but has extensive flavour due to its capsicum oleoresin properties.
- **Types**: It is of three types namely **Single Patti, Double Patti and Odalu**.

Related News:

Dalle Chilly

Agricultural and Processed Food Products Export Development Authority (APEDA) successfully exported first consignment of GI-Tagged Dalle Chilly from Sikkim to the Solomon Islands.

About Dalle Chilly

- Dalle Chilly, also known as **Fire Ball Chilly** or **Dalle Khursani**, is renowned for its intense pungency, bright red color, and high nutritional value.
- It is **rich in vitamins A, C, and E**, along with **potassium**.
- Its **Scoville Heat Units (SHU)** range from 100,000 to 350,000, making it one of the hottest chillies.
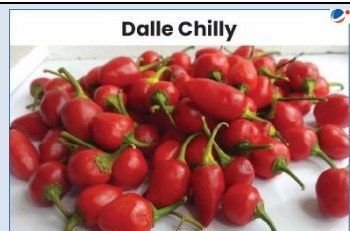
7.8.2. KANNADIPPAYA TRIBAL CRAFT

About Kannadippaya

- It is a beautifully woven mat, also known as **"mirror mat"** due to its unique reflective pattern.
- Made from the soft inner layers of **reed bamboo,** the mat stands out for its unique properties — **providing warmth during winter and cooling effect in summer.**
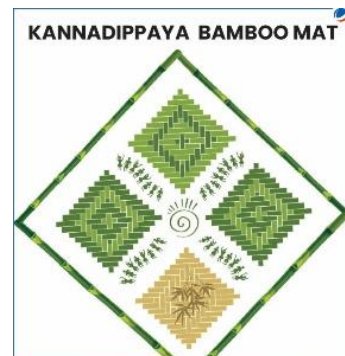
7.9. FESTIVALS AND DANCES IN NEWS

7.9.1. NAVROZ

Prime Minister, greeted everyone on the occasion of Navroz.

About Navroz/Nowruz

- Nowruz, meaning **"new day" in Persian**, is an ancient festival marking **spring's arrival and the triumph of light over darkness.**
- **Dating back over 3,000 years to Zoroastrianism**, it falls on the vernal equinox (usually March 20 or 21).
- Celebrated in the **Balkans, the Black Sea Basin, the Caucasus, Central Asia, the Middle East and other regions.**
- Promotes values of **peace and solidarity** between generations and within families as well as reconciliation and neighbourliness.
- It is **inscribed on Representative List** of the **Intangible Cultural Heritage of Humanity of the UN.**

7.9.2. SARHUL FESTIVAL

Sarhul Festival was celebrated in **Jharkhand** and the **larger Chhotanagpur region.**

About Sarhul Festival

Sarhul Festival

- It is celebrated by **Oraon, Munda and Ho tribes**, of Jharkhand region.
- Sarhul, literally **"worship of the Sal tree"** marks the **beginning of New Year**.
  - They are seen as **abode of Sarna Maa**, the deity protecting village from inclement natural forces.
- It is rooted in **nature worship** and celebrates the **symbolic union of Sun & Earth**.
- Celebrated every year in **1st month of Hindu calendar**, on the third day of the moon or the fortnight of 'Chaitra'.
- It marks the advent of the **spring season or "Phaagun"**.

7.9.3. DHIMSA DANCE

Tribals in Andhra Pradesh performed Dhimsa dance after getting electricity connection for the first time after independence.

About Dhimsa Dance

- This dance form is believed to have originated in the **Koraput area of Odisha**.
- It is exceptional dance performed by the hill tribes of **Araku Valley** in **Visakhapatnam Area, Andhra Pradesh.**
- About **15 to 20 women** attired in emblematic ethnic dresses and stuff perform the dance.
  - The leading women carry a **peacock feather** in her hand.
- **Instruments used:** Mori, Thudum and Dappu.

7.9.4. JHUMOIR DANCE

Prime Minister of India attended Jhumoir Binandini (Mega Jhumoir) 2025 in Guwahati, Assam which symbolises 200 years of Assam's tea industry.

Jhumoir Dance

About Jhumoir (Jhumur) Dance

- **Folk dance primarily performed by Assam Tea Tribe** and **Adivasi Communities** of Assam during harvest season. It embodies spirit of inclusivity, unity and cultural pride.
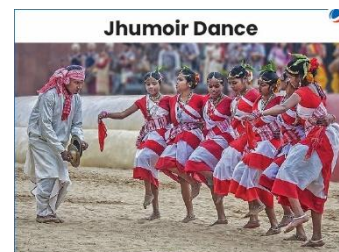
- **Women are main dancers and singers**, while **men play traditional instruments** like madal, dhol, or dhak (drums), cymbals, flutes, and shehnai.
- Attire worn varies from community to community, although **red and white sarees** are particularly popular among women.

7.10. OTHER IMPORTANT NEWS

7.10.1. KAMBA RAMAYANA

Ministry of Culture to revive the 'Kamba Ramayana'

About Kamba Ramayana (The Ramavataram)

- **Composer**: The Kamba Ramayana was composed by the great poet Kamban in Tamil.
- **Time Period**: This version of the Ramayana was written in the 12th-13th century CE.
- **Cultural Significance**: It's a culturally rich adaptation of the Valmiki Ramayana.

About Kamban

- **Birthplace**: Kamban was born in Thanjavur, in the Chola kingdom.
- **Cultural Influence**: He belonged to the third great wave of Tamil literature, following the Sangam period and the Bhakti literature of the Alwars and Nayanmars.
- **Other literary work**: **Sadagopar Antati** (devotional work praising Vaishnavite saint Nammalvar), **Saraswati Antati** (tribute to the goddess of knowledge), etc.

7.10.2. GEET GAWAI

Prime Minister was welcomed with **a traditional Bihari cultural performance Geet Gawai** during his state visit to Mauritius.

About Geet Gawai

Geet Gawai

- It is **a pre-wedding ceremony** that combines **rituals, prayer, songs, music and dance**.
- It is also inscribed on **UNESCO's Representative List of the Intangible Cultural Heritage of Humanity** in December 2016.
- Performed mainly by **Bhojpuri-speaking communities** having Indian descent in Mauritius.
- **Participants**: Traditionally, **female family members** and neighbours. It extends to public performances and **presently men also participate**.
- **Main-Musical Instrument**: Dholak (a two-headed drum).

7.10.3. DOKRA ARTWORK

Recently, Indian Prime Minister gifted **Dokra art pieces** to French President and a **Dokra Brass Peacock Boat** to the Prime Minister of Thailand.

About Dokra Artwork

Dokra Artwork

- **Origin:** It can be traced to the **Dhokra Damar tribes (**traditional metal smiths of Central India), in the regions of Chhattisgarh, Jharkhand, West Bengal, and Odisha.
- **Technique:** It uses the **lost-wax technique,** or **cire perdue,** for metal casting.
  - **Each piece is one-of-a-kind** due to the **single-use mold process.**
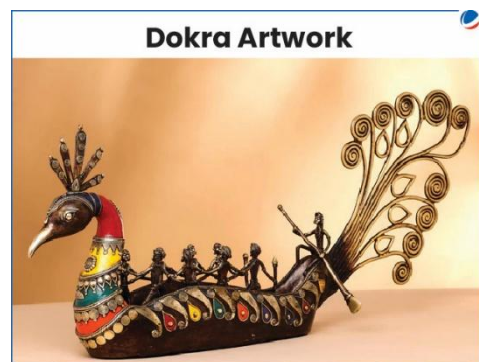
o **Earliest Example:** The **lost-wax technique** has been used in India for over 4,000 years, earliest known example is the **dancing girl** of **Mohenjo-daro.**
- **Theme**s: Artisans draw inspiration from nature, mythology, and everyday life.

7.10.4. TEA HORSE ROAD

China's Ambassador to India recently posted on X about historic Tea Horse Road (THR).

About THR

- **Origin:** Tang dynasty in China (618-907 CE).
- It **connected India to China, through Tibet** (although not as well-known as **Silk Road,** which **linked China and Europe).**
  o It was a **crucial commercial pathway** for centuries.
- It does not refer to a single road but a **network of branching paths** that began in southwest China and ended in the Indian subcontinent.
- The means for transporting goods on these routes were **trains of horses (ponies and mules) and human porters,** and the network of trails and roads to Tibet became known as the Tea Horse Road.
- Two main pathways passed through **cities like Dali and Lijiang in Yunnan province,** and reached **Lhasa in Tibet,** before entering the Indian subcontinent where they branched into present-day **India, Nepal, and Bangladesh.**
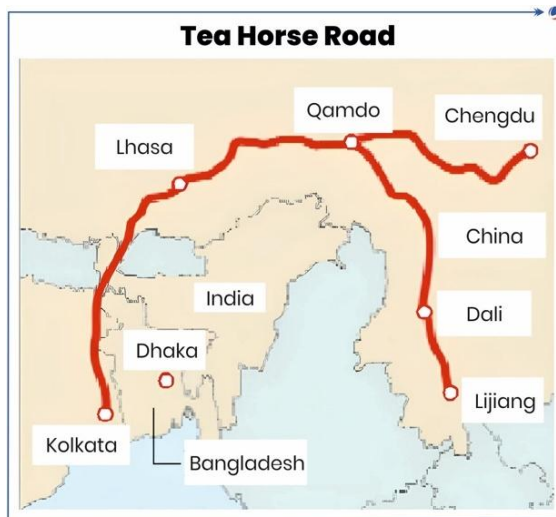
7.10.5. JNANPITH AWARD

Vinod Kumar Shukla has been selected for 59th Jnanpith Award. It is recognized as the highest literary award in India.

About Jnanpith Award

- The Jnanpith Award has been presented annually by **Bharatiya Jnanpith since 1965** for outstanding contributions to Indian literature.
  o **Bharatiya Jnanpith,** established in **1944,** is one of the **premier literary organizations.**
- Jnanpith Award, **considered the highest literary award in India,** given annually for the best creative literary output to writers in any of the **22 languages recognized by the Constitution of India.**
  o **From 2013,** works in **English language were also considered.**
- **Eligibility** for the award is restricted to **Indian citizens.**

7.10.6. INTERNATIONAL OLYMPIC COMMITTEE (IOC)

Zimbabwean former swimmer Kirsty Coventry becomes the **first female president of the IOC.**

- IOC is a **not-for-profit independent body overseeing the Olympic movement**.

About IOC

- **Headquarters**: Lausanne (the Olympic Capital), Switzerland.
- **Genesis**: Founded at the first Olympic Congress in Paris (1894).
- **Vision**: To Build a Better World through Sport.
- **Funding**: **Entirely privately funded** and distributes 90% of its revenues for the development of sports and athletes at all levels.
- **Function**:
  o Decides **Olympic sport inclusions** and **host city selections**.

> o Facilitates collaboration among Olympic stakeholders, including athletes, National Olympic Committees (NOCs), and sports federations.
>> **Indian Olympic Association (IOA)** serves as India's NOC.

7.11. ERRATA

PT-365 Updated Part 2 (November, 2024 to January, 2025)

- In **Article 7.1.1 (Ramappa Temple),** it was incorrectly mentioned that Prola II was the first independent ruler of the Kakatiya Dynasty. The correct information is that **Prataparudra I was the first independent ruler of the Kakatiya Dynasty.**
- In **Article 7.2.2 (Abathsahayeswarar temple)**, the year for the **UNESCO Award of Distinction** (as part of **UNESCO Asia - Pacific Awards for cultural heritage conservation)** was incorrectly mentioned as 2023. The **correct year is 2024**.

PT 365 Personalities in News Document

- In **Article 5 of the Part B Medieval India** had covered the Personality Lachit Barphukan. In the information given, it was mistakenly given that he was the first Barbarua of the Ahom Kingdom. The correct information is:

His father, Momai Tamuli, was the first Barbarua of the Ahom Kingdom.

8. SCHEMES IN NEWS

8.1. RASHTRIYA GOKUL MISSION

Why in the news?

The Union Cabinet, has approved the Revised Rashtriya Gokul Mission (RGM).

Quick Facts

- **Ministry:** Ministry of **Fisheries, Animal Husbandry and Dairying**
- **Type:** Central Sector Scheme
- **Purpose:** To boost growth in livestock sector
- **Tenure:** 2021-22 to 2025-26

Objectives

- **Increase bovine productivity and milk production** sustaina**bly** using advanced technologies**.**
- **Genetic Improvement by** Promoting the use of **high genetic merit bulls** for breeding and **conservation of indigenous cattle and buffaloes**
- Expansion of **Artificial Insemination (AI) and** ensure **doorstep delivery** of AI services to farmers.

Salient Features

- Launched in **2014** under the **National Programme for Bovine Breeding and Dairy Development.**
Key Components of the Scheme
- **Heifer Rearing Centres**: The government will provide a one-time **35% capital subsidy** to establish Heifer Rearing Centres, supporting 30 facilities that can house 15,000 heifers in total.
  - Heifer is any young, female, domestic bovine that has not produced offspring.
- **Support for high-genetic-merit in vitro fertilization (IVF) heifers:** The government will offer a 3% interest rate reduction on loans for farmers purchasing high-genetic-merit IVF heifers.
- **Availability of High genetic Merit Germplasm via** Bull Production Programme through **Progeny Testing and Pedigree Selection.**
  - Implementation of IVF Technology**.**
- **Extension of Artificial Insemination (AI) Network** via establishment of Multi-Purpose AI technicians in Rural India (MAITRIs) to meet shortage of AI technicians in the country.
  - Implementation of National Digital Livestock Mission that **will enable inputs of all reporting, including disease and outbreak.**
- **Development and Conservation of indigenous breeds** via assistance to Gaushalas, Gosadans and Pinjarapoles which are maintaining elite animals of indigenous breeds.
- **Increasing awareness via Nationwide AI Programme** to ensure free of cost AI at the farmer's doorstep.
  - Awards to Farmer **(Gopal Ratna/ Kamdhenu).**
- **Skill Development** via training of professionals and existing AI workers**.**
- **Research, development and innovation** in bovine Breeding
- **Implementing Agency:** Livestock Development Boards or Milk Federations of States, NDDB, ICAR, etc.
Initiatives under RGM
- **For Indigenous Bovines:** Awards for encouraging farmers/breeder societies to rear Indigenous breeds of Bovines: Gopal Ratna awards, Kamdhenu awards.
  - Establishment of **Gokul Grams.**
  - Establishment o**f National Kamdhenu Breeding Centers**: To act as repository of **indigenous germplasm** of all indigenous breeds (Andhra Pradesh and Madhya Pradesh).
- **e-Pashu Haat - Nakul Prajnan Bazaar:** An **e-market portal connecting breeders** and farmers, for quality disease-free bovine germplasm.
- **Advanced Reproductive Technology:** To improve availability of **disease-free female bovines.**

PT 365 - Updated Classroom Study Material

Impact of RGM:

- **Milk production has increased by 63.55% in the last ten years**, along with the availability of milk per person, which was 307 grams per day in 2013-14, has increased to 471 grams per day in 2023-24.
- **Productivity** has also **increased by 26.34% in the last ten years**.

8.2. RESTRUCTURED SKILL INDIA PROGRAMME

Why in the News?

Union Cabinet approves continuation and restructuring of **Skill India Programme (SIP).**

Quick Facts

- **Ministry:** Ministry of Skill Development and Entrepreneurship (MSDE)
- **Purpose:** Building a skilled, future-ready workforce by integrating demand-driven, technology-enabled, and industry-aligned training
- **Type:** Central Sector Scheme
- **Tenure:** Till 2025-26

Objectives:

- To provide a strong **institutional framework** to implement and scale up skill development and to impart **training to 1 crore youth every year**.
- Skill Development through **short-term training** (Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and Jan Shikshan Sansthan (JSS)) and **Long-term training** (craftsmen Training Scheme through Industrial Training Institutes (ITIs)).

Salient Features

About Restructured Skill India Programme
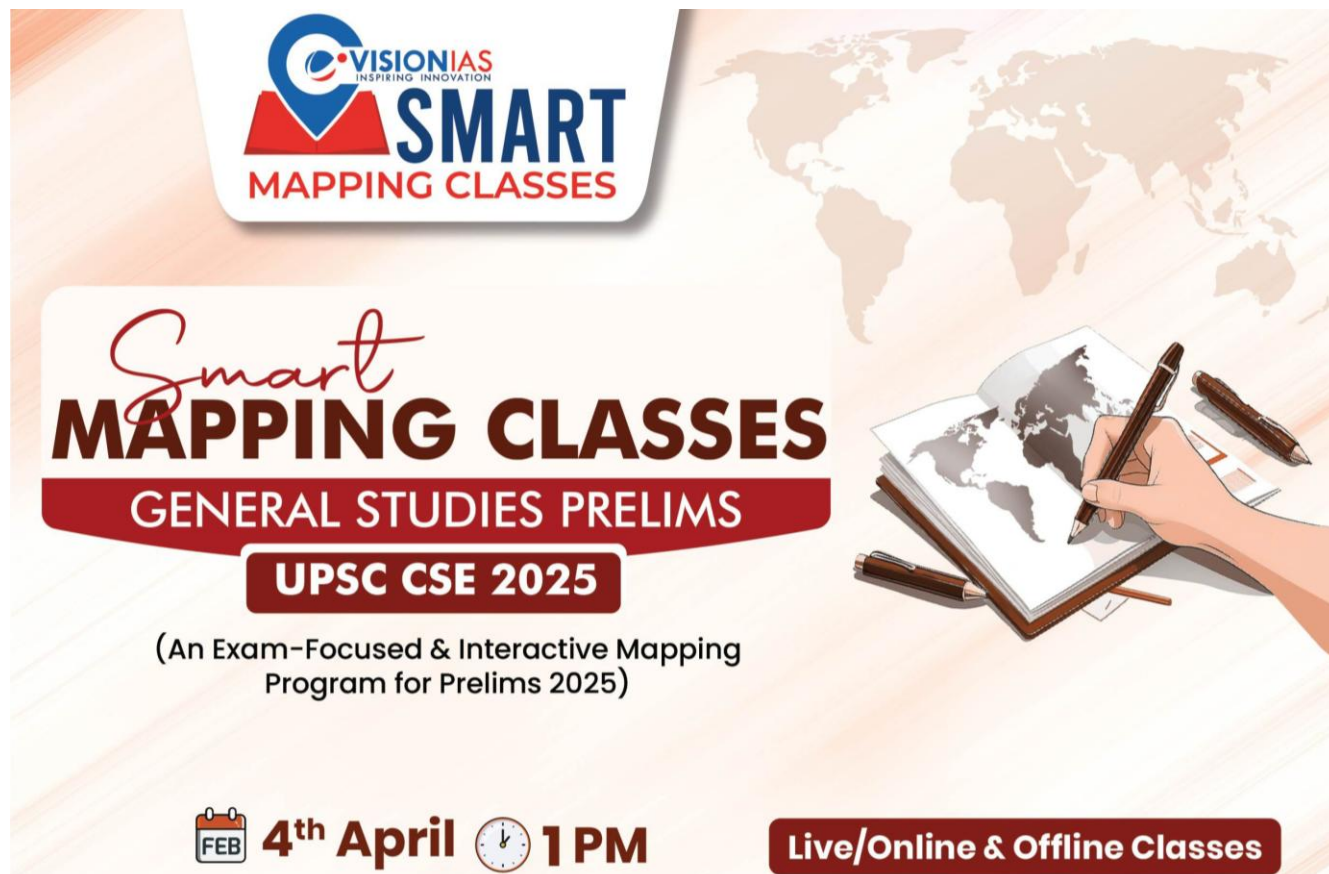
- **Formal recognition of skills**: Under restructured programme, all certifications are mapped to the **National Skills Qualification Framework (NSQF)** and seamlessly integrated with **DigiLocker** and the **National Credit Framework (NCrF).**

3 Key components of Restructured Skill India Programme

- **Pradhan Mantri Kaushal Vikas Yojana 4.0 (PMKVY 4.0)**
  - Provides **NSQF-aligned demand-driven skill training** through **Short-Term Training (STT)** and reskilling and upskilling through **Recognition of Prior Learning (RPL).**
  - **Target beneficiary**: 15-59 years
  - **Future Skills**: 400+ new courses on **emerging technologies** like AI, 5G technology, Cybersecurity, Green Hydrogen, Drone Technology etc.
  - **Skill Hubs**: Established across premier academic institutions like IITs, NITs, Jawahar Navodaya Vidyalayas (JNVs), CIPET etc.

Key Features of PMKVY 4.0
Pradhan Mantri Kaushal Vikas Yojana

Industry-oriented — Aligns with industry demands and market requirements

On-the-Job Training — Integration of OJT for experiential learning

Flexible Learning — Blended and flexible learning model

Micro-credentials — NoS-based courses and micro-credential approach

Inclusive Skilling — Accessible training in multiple regional languages

Quality Assurance — Quality training and assessments

Standardization — Expertise and standardization across training centers

RTD Training — Recruit Train Deploy training through industries

Addressing Skill Gaps — Better identify sectoral skill gaps and industry needs

- o **International Mobility Initiatives**: Equipping Indian workers with globally recognized skills through **Mobility Partnership Agreements (MMPAs)**.
  - > India has signed **MMPAs** with various countries including France, Germany, Israel etc.
- o 30 **Skill India International Centers** to be set up to cater to the demand for skilled workers for foreign countries.
- o **Whole-of-government approach**: Inter-ministerial convergence and **"Ease of Doing Business" approach** for seamless execution of skilling initiatives.

- **Jan Shikshan Sansthan (JSS) Scheme**
  - o **Objective: Community-centric** skilling initiative to provide **vocational training** to non-literates, neo-literates as well as school drop-outs in rural regions by identifying relevant skills in that region.
  - o **Target Beneficiary**: 15-45 years
  - o **Inclusivity**: Focus on women, rural youth, and economically disadvantaged groups.
  - o JSS is linked with initiatives like **PM JANMAN**, Understanding of Lifelong Learning for All in Society (**ULLAS**), etc. to promote inclusive skilling.

- **Pradhan Mantri National Apprenticeship Promotion Scheme (PM-NAPS)**
  - o Aimed at fostering **apprenticeship training** across India, ensuring apprentices gain **industry-specific skills** in both **manufacturing and services** through **real-world exposure**.
    - > This is in accordance with the **Apprenticeship Act, 1961**.
  - o **Target Beneficiary**: 14-35 years
  - o **Financial incentives** to industries for engaging apprentices
    - > **25% of the stipend**, up to **Rs.1,500** per month per apprentice, will be provided by the **Central Government** through Direct Benefit Transfer (DBT).
  - o **Future Skills**: Apprenticeship opportunities in emerging fields such as **AI, Industry 4.0 technologies etc.**
  - o **Inclusivity**: Promotes enrolment of apprentices in **small establishments like MSMEs** and **underserved areas** such as aspirational districts and North-East Region.

PT 365 - Updated Classroom Study Material

9. APPENDIX 1: INDIA STATE OF FOREST REPORT 2023

FOREST AND TREE COVER

Keywords

- **Forest Cover**: All areas having tree cover with canopy density more than or equal to 10% and above, and an area of more than or equal to one hectare.
- **Tree Cover:** Tree Cover implies patches of trees as well as isolated trees outside the Recorded Forest Area (RFA) on areas less than one hectare.
- **Recorded forest area (RFA**): The geographic area recorded as 'forest' in government records.
  - The 'recorded forest area' largely consists of the '**Reserved Forests' (RF) and the 'Protected Forests' (PF),** constituted under the provisions of the Indian Forest Act, 1927.

Key Findings

- Total forest and tree cover **is 25.17% of geographical area, which has 21.76% forest and 3.41% tree cover.**
- **Forest and tree cover increased by 1,445 sq km,** including 156 sq km forest and 1,289 sq km **tree cover since 2021.**
- North Eastern region has **67% forest and tree cover of its geographical area**.
- **19 states/UTs have more than 33% forest cover** whereas 8 states have more than **75% of forest cover:**
  - Mizoram, Lakshadweep, A&N Islands, Arunachal Pradesh, Nagaland, Meghalaya, Tripura, Manipur.

Categories	Top Three States when compared to last assessment (2021)		
Max Increase in Forest & Tree Cover	Chhattisgarh	Uttar Pradesh	Odisha
Max Increase in Forest Cover	Mizoram	Gujarat	Odisha
Largest Forest & Tree Cover (Area)	Madhya Pradesh	Arunachal Pradesh	Maharashtra
Largest Forest Cover (Area)	Madhya Pradesh	Arunachal Pradesh	Chhattisgarh
Percentage of Forest Cover to Geographical Area	Lakshadweep	Mizoram	Andaman & Nicobar
Max Decrease in Forest & Tree Cover	Madhya Pradesh	Karnataka	Ladakh
Largest Forest Cover in Cities	Delhi	Mumbai	Bengaluru

MANGROVE COVER

Key Finding

- Total mangrove cover is 4,991.68 km^2 **(0.15% of geographical area).**
- Overall mangrove cover **decreased by 7.43 km^2 since 2021**.
- Andhra Pradesh saw a **notable increase, followed by Maharashtra.**
- **Except for Gujarat and A&N islands**, Mangrove cover has increased in all other States/UTs
- **Mangrove cover by area in decreasing order:** West Bengal, Gujarat, A&N Islands.

FOREST FIRE

Key findings

- The top three states with the most fire incidents in the 2023-24 season are **Uttarakhand, Odisha, and Chhattisgarh.**
- **Maximum number of forest fires detected (2023-24) in Tiger reserves are** Nagarjunsagar Srisailam, Indravati and Valmiki Tiger Reserve.

GROWING STOCK

Keywords

- **GROWING STOCK:** It is the **sum (by number or volume) of all the trees growing/living in the forest or a specified part of it.**

Key findings

- There is a total increase of **4.25%** in **the growing stock of the country as compared to the ISFR 2021.**
- **Arunachal Pradesh** has the maximum growing stock in forests, followed by **Uttarakhand, Chhattisgarh and Madhya Pradesh.**
- **Madhya Pradesh has the maximum bamboo-bearing area,** followed by Arunachal Pradesh, Maharashtra and Odisha.
  - Bamboo-bearing area in **Arunachal Pradesh has shown the highest increase.**
- **Karnataka has shown the highest decrease** in the bamboo-bearing area, followed by Manipur.

CARBON STOCKS IN INDIA'S FORESTS

Key Findings

- **There is an increase of 81.5 Mt of carbon stock** as compared to the estimates of previous assessment.
- **Arunachal Pradesh has the maximum carbon stock** of followed by Madhya Pradesh, Chhattisgarh and Maharashtra**.**
- **Jammu & Kashmir** is contributing the maximum per hectare carbon stock**,** followed by **Sikkim, Himachal Pradesh and, Andaman & Nicobar Islands.**

TREES IN AGROFORESTRY SYSTEMS

Key Findings

- Total agroforestry growing stock in **India (2023) is 1,291.68 million m^3.**
- Highest state-wise growing stock: **Maharashtra, Karnataka, and Odisha.**

IMPORTANT CHARACTERISTICS OF INDIA'S FORESTS

Key Findings

- There is a **general improvement in soil health (87.16% of shallow to deep soil as against 83.53% in 2013).**
- **The soil organic carbon has also increased marginally** during this period.

DECADAL CHANGE OF VARIOUS FOREST PARAMETERS (2013-23)

Overall Increase

- **Forest Cover:** It has shown an increase of 16,630.25 km^2. In the hill districts of the country, the forest cover has increased by 2,649.04 km^2.
- **Mangrove:** It has increased by 296.33 km^2.
- **Tree cover**: It has shown an increase of 20,747.34 km^2.

PT 365 - Updated Classroom Study Material

10. APPENDIX 2: TRADITIONAL THEATRE FORMS IN INDIA

Traditional Theatres of India

Kuriyala
★ Himachal Pradesh

Swang
★ Haryana
★ Punjab
★ Rajasthan
★ Uttar Pradesh

Bhond Pather
★ Kashmir

Ramman
★ Uttarakhand

Bidesia
★ Bihar

Nautanki, Rasleela & Ramleela
★ Uttar Pradesh

Bhaona, Ankia Nat & Ojapali
★ Assam

Bhavai
★ Gujarat

Maach
★ Madhya Pradesh

Tamaasha & powada
★ Maharashtra

Prahlad Natak
★ Odisha

Jatra
★ West Bengal
★ Assam
★ Odisha
★ Tripura

Pandavani
★ Chattisgarh

Dashavatar
★ Goa

Yakshagaana & Bhoota kola
★ Karnatka

Krishnattam, Theyyam, Koodiyaattam & Mudiyettu
★ Kerala

Veedhi Natakam
★ Andhra Pradesh

Therukoothu
★ Tamil Nadu

Burrakatha & Pagati Veshaalu
★ Telangana
★ Andhra Pradesh

11. APPENDIX 3: ANCIENT INDIA'S CONTRIBUTIONS TO GLOBAL SCIENCE

Ancient India's Contributions to Global Science

The Idea of Zero	**Aryabhata** introduced the symbol for zero, enabling modern arithmetic operations.
The Decimal System	India developed the decimal system, revolutionizing arithmetic calculations.
Numeral Notations	Indian numeral system, adopted by Arabs and later the West, became "Arabic numerals."
Fibonacci Numbers	The **Fibonacci sequence** was first recorded in India through Sanskrit prosody.
Binary Numbers	**Pingala** introduced the concept of binary numbers in his work on poetic meters.
Chakravala Method of Algorithms	**Brahmagupta** devised an early algorithm to solve quadratic equations.
Ruler Measurements	Harappan rulers had precise calibrations used in ancient architecture.
Theory of Atom	**Kanad** proposed an **atomic theory** centuries before John Dalton.
Heliocentric Theory	**Aryabhata** described Earth's rotation and revolution around the Sun.
Wootz Steel	High-quality Indian steel was renowned worldwide for its strength and pattern.
Smelting of Zinc	India pioneered the distillation process for zinc production.
Plastic Surgery	**Sushruta** developed advanced surgical techniques, including rhinoplasty.
Cataract Surgery	**Sushruta** performed the first recorded cataract surgeries.
Ayurveda	**Charaka** laid the foundation for holistic medicine and preventive healthcare.
Iron-Cased Rockets	**Tipu Sultan** developed iron-cased rockets, influencing modern warfare.
Seamless Metal Globe	**Mughals** created seamless metal globes using **lost-wax casting.**

PT 365 - Updated Classroom Study Material

Heartiest
Congratulations
to all Successful Candidates

10 in **TOP 10** Selections in **CSE 2024**

from various programs of **Vision IAS**

1 AIR
Shakti Dubey

2 AIR
Harshita Goyal

3 AIR
Dongre Archit Parag

4 AIR
Shah Margi Chirag

5 AIR
Aakash Garg

6 AIR
Komal Punia

7 AIR
Aayushi Bansal

8 AIR
Raj Krishna Jha

9 AIR
Aditya Vikram Agarwal

10 AIR
Mayank Tripathi

79 Selections in **TOP 100** in **CSE 2023**

1 AIR
Aditya Srivastava

2 AIR
Animesh Pradhan

5 AIR
Ruhani

AHMEDABAD   BENGALURU   BHOPAL   CHANDIGARH   DELHI   GUWAHATI   HYDERABAD   JAIPUR   JODHPUR   LUCKNOW   PRAYAGRAJ   PUNE   RANCHI