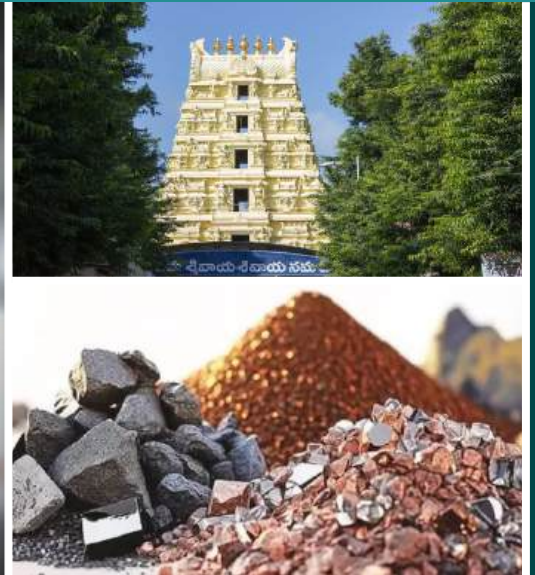


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POLITY & GOVERNANCE

ELECTORAL ROLL MANAGEMENT

Why in News: The Election Commission conducted a Special Intensive Revision (SIR) of electoral rolls in Bihar and plans to extend it nationwide in a phased manner.

Key Details

- The Election Commission of India (ECI) recently completed the **Special Intensive Revision (SIR)** of electoral rolls in Bihar ahead of the upcoming Assembly elections.
- This exercise conducted under the **Representation of the People Act, 1950** aims to ensure that the voter lists remain accurate, updated, and inclusive. The EC now plans to extend this exercise to other States in a phased manner.

Significance of Special Intensive Revision (SIR):

Under **Section 21 of the RP Act, 1950**, electoral rolls must undergo periodic revision. Usually, a **summary revision** takes place before major elections. However, the Act empowers the EC to conduct a **special revision** whenever required.

The Bihar SIR was significant because:

- It required **all registered voters** to submit enumeration forms.
- Post-2003 electors had to submit documents proving **citizenship**, following concerns about illegal entries.
- The Supreme Court, through interim orders, **allowed Aadhaar** as an acceptable identity document for this exercise.
- The final electoral roll was published on **September 30**, marking completion of the first major SIR under the June 24 EC guidelines.
- The EC intends to carry out similar revisions nationwide, synchronised with Assembly election cycles.

Key Electoral Forms under the Registration of Electors Rules, 1960:

- To effectively participate in the revision process, citizens must understand the essential forms prescribed under the **Registration of Electors Rules (RER), 1960**. The most relevant forms include:

- **Form 6**
 - ✓ **Purpose:** For inclusion of name in the electoral roll.
 - ✓ **Used by:**
 - New voters (18+ or to turn 18 as of qualifying date)
 - Migrants who have shifted from one constituency to another
- **Also used by Overseas Electors (NRIs)** to register under Section 20A of the RP Act.
- **Form 6A**
 - ✓ **Purpose:** For **Overseas Electors** (Indian citizens residing abroad) to apply for registration.
 - ✓ **Documents required:** Passport details and residence proof abroad.
- **Form 7**
 - ✓ **Purpose:** For raising **objections** to the inclusion of a name or for requesting **deletion** of a name (e.g., deceased persons, shifted voters).
 - ✓ **Crucial for ensuring accuracy** of the electoral roll.
- **Form 8**
 - ✓ **Purpose:** For **correction of entries** such as spelling mistakes, gender details, or age mismatch.
- **Form 8A**
 - ✓ **Purpose:** For **shifting within the same constituency** (change of address).
- These forms are available both offline (through Booth Level Officers) and online via the **Voter Helpline App** or **ECI's voter service portal**.

Citizen Responsibilities for Clean Electoral Rolls:

- The integrity of India's democratic process depends on the accuracy of electoral rolls. Citizens must actively participate in the revision process by:
- **Verifying Draft Rolls**
 - ✓ Once draft rolls are published, citizens should check their details and ensure accuracy.
- **Submitting Enumeration Forms**
 - ✓ During SIR or summary revisions, every voter must submit the required details through the prescribed forms.
- **Ensuring Correct Registration**

- ✓ **New voters** should promptly apply through Form 6.
- ✓ **Migrants** must update their constituency details.
- ✓ **Overseas voters** must register through Form 6A.
- **Using Forms for Objections and Corrections**
 - ✓ Incorrect details must be corrected via **Form 8**.
 - ✓ Duplicate or invalid entries should be reported using **Form 7**.
- **Supporting Marginalised Groups**
 - ✓ Political parties, NGOs, and civil society groups should help vulnerable sections - elderly citizens, persons with disabilities, migrant workers to ensure their names are not excluded.

Conclusion

A transparent and error-free electoral roll is the foundation of **free and fair elections**. While debates continue about the necessity and timing of SIR exercises, their importance for electoral integrity is undeniable. With the Supreme Court's permission to use Aadhaar as identity proof and the EC's nationwide rollout plan, the revision process is likely to become more robust.

EXPECTED QUESTION FOR UPSC CSE

Practice MCQ

Que. With reference to the Special Intensive Revision (SIR) of electoral rolls, consider the following statements:

1. The Election Commission can conduct a special revision of electoral rolls at any time under the Representation of the People Act, 1950.
2. The qualifying date for revision of rolls is fixed only as January 1 every year.
3. During SIR in Bihar, the Supreme Court allowed Aadhaar as one of the documents to be submitted for verification.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Answer: b (1 & 3 only)

SC SEEKS CENTRE, EC RESPONSE ON PLEA CHALLENGING VOTING BAR ON UNDERTRIALS

Why in News: The Supreme Court of India has issued notices to the Union Government and the Election Commission of

India (ECI) on a petition challenging the blanket disqualification of prisoners including undertrials and pre-trial detainees from voting under **Section 62(5) of the Representation of the People Act (RPA), 1951**. The move has revived an important debate about electoral rights, presumption of innocence, and the nature of democratic participation within India's criminal justice system.

Key Details

1. Background of the Petition

- The plea, filed by advocate Sunita Sharma, argues that denying voting rights to all persons in custody is constitutionally arbitrary.
- It seeks a nuanced, individualised framework rather than a sweeping prohibition.
- The petition suggests allowing voting through:
 - ✓ **Polling stations within jails**, and
 - ✓ **Postal ballots for inter-state undertrials**.

Advocate Prashant Bhushan, representing the petitioner, highlighted that the restriction affects nearly **4.5 lakh prisoners**, of whom **over 75% are undertrials** (NCRB 2022).

2. Legal Provisions Under Challenge

- **Section 62(5), RPA 1951**
 - ✓ Bars any person confined in prison or in police custody from voting, except preventive detainees.
- **Section 16(1)(c), RPA 1950:** Allows disqualification from the voter list only if a person is:
 - ✓ convicted of corrupt practices or electoral offences,
 - ✓ of unsound mind, or
 - ✓ non-resident.

Thus, undertrials are legally eligible to be voters - but not allowed to vote while in custody.

3. Constitutional Arguments Raised

- **Right to Vote as a Fundamental Right**
 - ✓ Though previously held as statutory (Anukul Chandra Pradhan, 1997), the Supreme Court's **Anoop Baranwal (2023)** decision recognised elements of voting as a fundamental right linked to Article 19(1)(a).
 - ✓ This strengthens the challenge against blanket bans.

- **Article 14 – Equality and Non-Arbitrariness**
 - ✓ Prohibiting the entire class of prisoners from voting, regardless of guilt, offence type, or sentence duration, may violate equality principles.
- **Article 21 – Presumption of Innocence**
 - ✓ India’s prison population is dominated by undertrials (77%), many held for years without conviction.
 - ✓ The plea argues that denying them voting rights contradicts the principle that a person is innocent until proven guilty.
- **Disproportionate and Inconsistent Treatment**
 - ✓ Convicted individuals can contest elections under certain conditions, but innocent undertrials cannot vote, creating a constitutional paradox.

4. Comparative and Global Perspective

- Most democracies do not impose a complete ban on prisoner voting. Examples include:
 - ✓ **South Africa (1999 Constitutional Court ruling)** blanket ban struck down.
 - ✓ **Canada (Sauvé v. Canada, 2002)** restrictions on prisoner franchise held unconstitutional.
 - ✓ **European Court of Human Rights (Hirst v. UK, 2005)** blanket bans violate democratic principles.
- India’s total prohibition remains an exception rather than the global norm.

5. Data-Based Concerns

- According to NCRB (2022):
 - ✓ **77% of prisoners are undertrials**, the highest proportion globally.
 - ✓ **Conviction rate for IPC offences is only 8.55%**.
 - ✓ **80–90% of undertrials** in long-drawn cases are eventually acquitted.
- Thus, long-term disenfranchisement affects mostly unconvicted, marginalised individuals.

6. Logistical Feasibility

- The petition argues that facilitating voting for undertrials is administratively possible through:
 - ✓ **1,350+ operational jails** capable of hosting polling booths.
 - ✓ **Digital roll verification**, already used for service voters.

- ✓ **Postal ballot mechanisms**, as deployed for soldiers and absentee voters.

Conclusion

The Supreme Court’s intervention has opened a significant constitutional and policy debate on electoral inclusivity and fairness. With undertrials forming the majority of India’s prison population, a blanket ban disproportionately deprives unconvicted citizens of political participation. As democratic legitimacy rests on universal and equal suffrage, revisiting Section 62(5) of the RPA has become imperative. A future judgment may reshape India’s electoral landscape by aligning voting rights with constitutional morality, presumption of innocence, and international democratic norms.

EXPECTED QUESTION FOR UPSC CSE

Practice MCQ

Que. Consider the following statements regarding voting rights of prisoners in India:

1. Under the Representation of the People Act, 1951, undertrial prisoners are barred from voting.
2. Under the Representation of the People Act, 1950, undertrial prisoners are disqualified from being included in the electoral roll.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (a)

INTER-STATE MIGRANT WORKMEN ACT

Why in News: Punjab has recently witnessed renewed discussion on the **Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979** after a crime incident in Hoshiarpur triggered public anger and rising anti-migrant sentiments. Several panchayats passed resolutions against migrants, leading farmer unions and labour groups to demand strict enforcement of the Act to protect migrant workers and maintain social harmony.

About the Inter-State Migrant Workmen Act, 1979

- **Definition:**
 - ✓ The Act is a Central legislation enacted by Parliament to safeguard workers who migrate from one state to another for employment, typically through contractors.

- **Objective:**
 - ✓ To regulate recruitment, ensure registration of establishments and contractors, and provide migrant workers basic rights including:
 - Equal wages with local workers
 - Displacement allowance
 - Journey allowance
 - Housing and medical facilities
 - Protective gear and safe working conditions
- **Nature of the Law:**
 - ✓ This is a **welfare and regulatory law** aimed at preventing exploitation and ensuring accountability of employers and contractors.
- **Enforcement:**
 - ✓ The Act was notified for nationwide implementation on **October 2, 1980**. Punjab operationalised it through the **Inter-State Migrant Workmen (Punjab) Rules, 1983**.
 - Maintain records such as muster rolls, wage registers, and overtime registers
 - ✓ Contractors must submit information on:
 - Previous convictions (if any)
 - Security deposits
 - Compliance with labour laws
 - ✓ Licenses are typically valid for **one year** and require renewal.
- **Ground Reality:**
 - ✓ Despite clear rules, **implementation remains weak** outside organised industrial zones.

Rising Anti-Migrant Narrative in Punjab

The recent crime incident triggered:

- Public anger and panchayat resolutions restricting migrant entry
- Fear and insecurity among migrant communities
- Concerns raised by farmer unions, labour groups and industry bodies

Anti-migrant rhetoric has also surfaced earlier such as political calls to restrict land purchase or voting rights for migrants reflecting deeper anxieties about demographic change as many Punjabis migrate abroad.

Significance of the Act's Enforcement

- Protects migrant workers from exploitation and underpayment.
- Ensures accountability for contractors and establishments.
- Supports Punjab's labour-intensive economy.
- Helps preserve **social harmony and inter-community trust**.
- Strengthens India's commitment to the **Constitutional principles of equality** and Articles 14, 16, 23 & 24 (labour and protection from exploitation).

Major Government Mechanisms Supporting Migrant Workers

- **E-Shram Portal:** National database for unorganised workers enabling portability of benefits.
- **One Nation One Ration Card (ONORC):** Ensures migrant workers can access subsidised food anywhere.
- **Shram Suvidha Portal:** Facilitates transparent compliance and reporting of labour laws.
- **Inter-State Migrant Worker Cells:** Functioning in several states to address worker grievances.

Why Punjab Needed the Act

Punjab has historically depended on migrant workers from **Bihar, Uttar Pradesh, Odisha, Jharkhand, West Bengal and Madhya Pradesh**, especially in:

- ✓ Agriculture (paddy sowing, harvesting)
- ✓ Brick kilns
- ✓ Textile and hosiery industries
- ✓ Construction and manufacturing

Key facts:

- Migrant inflow increased significantly after the **Green Revolution** in the 1970s.
- A 2016 state survey estimated **39 lakh migrant workers** in Punjab.
- During the **COVID-19 lockdown**, 18 lakh migrants registered to return home.

Given this scale, the Act is crucial for ensuring welfare, safety, and legal protection of migrant labour.

Implementation Mechanism (Punjab Rules, 1983)

- **Requirements for Establishments and Contractors**
 - ✓ Any establishment or contractor employing **five or more migrant workers** must:
 - Register on the **e-Labour Punjab Portal**
 - Provide details of workforce, contractors, and nature of work

- **Skill India and PM Vishwakarma:** Promotes skill development and formal recognition of migrant artisans/workers.

Challenges

- Poor registration and licensing compliance among small contractors.
- Lack of awareness among migrant workers about rights and entitlements.
- Shortage of labour inspectors and enforcement capacity.
- Rising local tensions and social stigma against migrants.
- Weak coordination among labour, police, panchayats, and industries.

Way Forward

- Strengthen mandatory digital registration of all contractors and establishments.
- Expand community-level awareness campaigns to counter misinformation.
- Integrate migrant welfare with **healthcare, social security, housing and education**.
- Promote **Community-Based Rehabilitation (CBR)** and worker support centres at district level.
- Encourage industry–government partnerships for safe workplaces and grievance redressal.
- Ensure political responsibility to prevent stereotyping and discrimination.

Conclusion

The renewed debate on the Inter-State Migrant Workmen Act in Punjab highlights the urgent need for effective labour governance, social cohesion, and protection of vulnerable communities. With stronger implementation, coordinated welfare measures, and community sensitisation, Punjab can ensure dignity, safety, and fair treatment for migrant workers strengthening both its economy and its commitment to inclusive development.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979, consider the following statements:

1. The Act mandates registration of establishments employing five or more inter-state migrant workers.

2. It provides for displacement and journey allowances to migrant workers.
 3. It applies only to government-run establishments.
- Which of the statements given above are correct?
- (a) 1 and 2 only
 - (b) 2 and 3 only
 - (c) 1 and 3 only
 - (d) 1, 2 and 3

Answer: (a)

“LIVE CASES” DASHBOARD UNDER LIMBS

Why in News: The Ministry of Law and Justice inaugurated the “Live Cases” Dashboard of the **Legal Information Management and Briefing System (LIMBS)**. The initiative, launched by the Union Minister of State (I/C) for Law and Justice, Shri Arjun Ram Meghwal, aims to strengthen **transparency, accountability, and efficiency** in government litigation management.

About the Legal Information Management and Briefing System (LIMBS)

- **Definition:**
 - ✓ LIMBS is an online platform developed by the Department of Legal Affairs to digitally monitor and manage government litigation across various courts and tribunals in India.
- **Purpose:**
 - ✓ To streamline litigation processes, improve coordination among ministries, and reduce unnecessary delays by providing real-time access to case-related information.
- **Key Components:**
 - ✓ Digital case records and briefs
 - ✓ Automated alerts for hearings and deadlines
 - ✓ Inter-ministerial access to case status
 - ✓ Analytical dashboards for decision-making
- **Current Data Coverage:**
 - ✓ **7,23,123 live cases** recorded under LIMBS
 - ✓ Cases from **53 Ministries/Departments**
 - ✓ **13,175 government users** and **18,458 advocates** updating records regularly

Features of the “Live Cases” Dashboard

- **Real-Time Visualization:** Displays live status of cases pending in different courts, enabling faster decision-making.

- **Upcoming Hearing Tracker:** Helps ministries prepare in advance through structured scheduling.
- **User-Friendly Interface:** Offers graphical insights, filters, and summaries for efficient review.
- **Integration and Coordination:** Encourages better communication between departments and legal representatives.

Objectives of the Initiative

- To strengthen **transparency** in government litigation.
- To enhance **accountability** through timely updates and monitoring.
- To **reduce litigation burden**, in line with PM Narendra Modi's emphasis on minimizing avoidable government appeals.
- To improve governance outcomes by using **data-driven insights**.
- To support the Government's broader **Digital India** and **e-governance** objectives.

Significance of the Dashboard

- **Improves Litigation Management:** Ensures that ministries respond promptly to court matters, reducing case pendency.
- **Enhances Efficiency:** Reduces duplication, improves documentation, and minimizes administrative delays.
- **Supports Good Governance:** Reflects a proactive approach towards reforming the justice delivery ecosystem.
- **Facilitates Accountability:** Responsible officers and advocates can be identified for delays or lapses.
- **Strengthens Policy Implementation:** Helps ministries track legal challenges to major schemes and reforms.

Relation to Legal and Governance Frameworks

- **National Litigation Policy (Draft):** Aims to reduce government litigation and ensure responsible filing of appeals.
- **Second Administrative Reforms Commission (2nd ARC):** Highlights the importance of ICT in administrative efficiency and transparency.
- **E-Courts Mission Mode Project:** The dashboard complements ongoing judicial digitization efforts.

Challenges

- **Uneven adoption across ministries** leading to delays in updates.

- **Capacity gaps** among staff handling digital systems.
- **Data accuracy concerns** if records are not updated consistently.
- **Legacy administrative practices** slowing the shift to digital systems.

Way Forward

- **Training and Capacity Building:** Regular training for legal officers and advocates to ensure smooth usage.
- **AI and Predictive Tools:** Future integration of AI for legal trend analysis and risk assessment.
- **Stronger Accountability Framework:** Clear timelines and responsibilities for updating case details.
- **Integration with e-Courts and digital record systems** for seamless data flow.
- **Performance Dashboards for Ministries:** Monthly performance indicators to encourage competition and efficiency.

Conclusion

The launch of the **LIMBS "Live Cases" Dashboard** marks a major step in India's journey towards **digital legal governance**. By enhancing transparency, coordination, and data-driven decision-making, the initiative strengthens the justice delivery system and aligns with the vision of a responsive, efficient, and technology-enabled government. Effective implementation and inter-departmental cooperation will be crucial to realizing its full potential.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. With reference to the Legal Information Management and Briefing System (LIMBS), consider the following statements:

1. It is an online platform designed to monitor government litigation across courts and tribunals.
2. The LIMBS "Live Cases" Dashboard provides real-time visualization of pending court cases.
3. LIMBS is implemented under the Ministry of Electronics and Information Technology.

Which of the statements given above are correct?

(a) 1 and 2 only
 (b) 2 and 3 only
 (c) 1 and 3 only
 (d) 1, 2 and 3

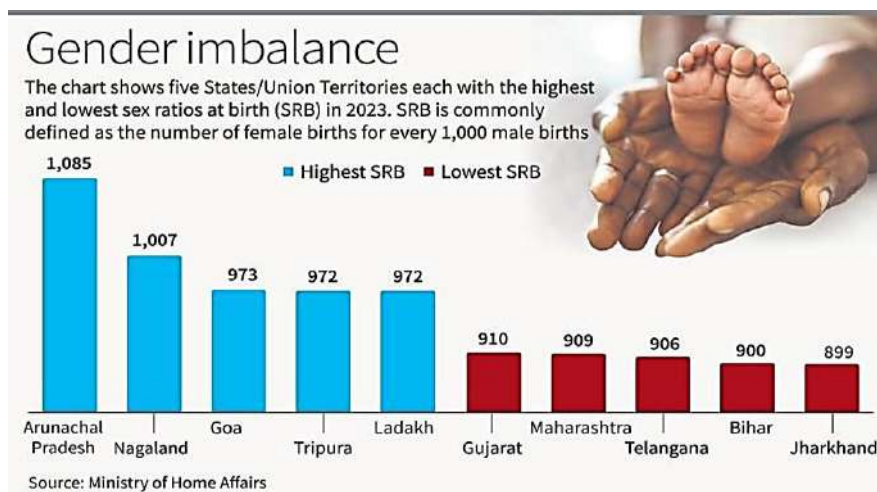
Answer: (a)

VITAL STATISTICS OF INDIA

Why in News: The Registrar General of India (RGI) released the “Vital Statistics of India based on Civil Registration System (CRS)” report for 2023. The report highlighted a decline in birth registrations and a marginal increase in death registrations.

What are the Key Findings of the Vital Statistics Report 2023?

- **Birth and Death Trends;** India registered **2.52 crore births in 2023**, about **2.32 lakh fewer** than in 2022, indicating a slight decline in the overall birth rate.
 - ✓ The number of **registered deaths stood at 86.6 lakh in 2023**, a **minor increase** from **86.5 lakh in 2022**.
 - ✓ There had been a **sharp spike in 2021**, with **1.02 crore deaths** - an excess of nearly **21 lakh**



What are the Reasons for the Skewed Sex Ratio in India?

- **Gender Bias:** A deep-rooted cultural preference for male heirs continues to dominate Indian society, where females are **often perceived as subordinate**. This gender bias manifests in unequal access to education, healthcare, and even survival opportunities for girls.
- **Son Preference:** Sons are traditionally viewed as future caretakers of parents and the principal economic supporters of the family. This belief reinforces the preference for male children, leading to discriminatory practices against female births.
- **Social Practices:** Patriarchal customs, particularly the **practice of dowry, further discourage families from raising daughters**. The financial burden associated with marriage often makes sons appear as economic assets, while daughters are seen as liabilities.

deaths from 2020, coinciding with the second wave of COVID-19.

- **Sex Ratio at Birth (SRB):** SRB refers to the number of female births per 1,000 male births.
 - ✓ **Lowest SRB:** Reported in **Jharkhand (899)**, followed by Bihar (900), Telangana (906), Maharashtra (909), Gujarat (910), Haryana (911), and Mizoram (911).
 - ✓ **Highest SRB:** **Arunachal Pradesh** led with a sex ratio of **1,085 females per 1,000 males**, followed by Nagaland (1,007), Goa (973), Ladakh and Tripura (972 each), and Kerala (967).
- **Institutional Births:** About **74.7% of total registered births in 2023** occurred in health institutions, reflecting gradual improvement in maternal and neonatal healthcare access. **Overall registration of births** for the year 2023 stood at **98.4%**
 - ✓ Timely **registration** refers to **births registered within 21 days** of occurrence.

- **Rising Income Paradox:** Contrary to expectations, the **rise in per capita income over the past six decades** has not improved the sex ratio. Instead, higher income and literacy levels have made sex-selective technologies more accessible, thereby worsening gender imbalance in several regions.

What Measures can be taken to Improve Sex Ratio in India?

- **Behavioural Change:** Long-term improvement requires a transformation in social attitudes.
 - ✓ Government initiatives such as the **Beti Bachao Beti Padhao** campaign should be further strengthened to promote gender equality and challenge patriarchal mindsets.
- **Youth Sensitization:** Reaching out to the youth through reproductive health education and awareness programmes is crucial.

- ✓ The services of **Accredited Social Health Activists (ASHA)** can be effectively leveraged in rural areas to spread awareness and encourage equitable practices.
- **Law Enforcement:** A stronger legal framework is essential to curb sex-selective practices. The **Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act, 1994** must be implemented strictly.
- ✓ Additionally, the recent decision of the **Drugs Technical Advisory Board** to include **ultrasound machines under the Drugs and Cosmetics Act** is a welcome step towards preventing their misuse for sex determination.

Registrar General of India

- The Registrar General of India **was founded in 1961** by the Government of India under the **Ministry of Home Affairs**.
- It arranges, conducts and analyses the results of the demographic surveys of India including the **Census of India** and Linguistic Survey of India.
- The position of Registrar is usually held by a civil servant holding the rank of Joint Secretary.

Civil Registration System (CRS)

- Civil Registration System (CRS) in India is the **unified process** of continuous, permanent, compulsory and universal recording of the vital events (births, deaths, stillbirths) and characteristics thereof.
- The data generated through a complete and up-to-date CRS is **essential for socio-economic planning**.
- Registration of Births and Deaths in India is mandatory with the enactment of **Registration of Births and Deaths (RBD), Act 1969** and is done as per the place of occurrence of the event.
- According to the 2020-21 annual report of the Ministry of Home Affairs (MHA), the Central government is planning to **revamp the Civil Registration System (CRS)** to enable the registration of birth and death in real-time with minimum human interface that will be independent of location.

Conclusion

India has created several impressive goals to reduce its population growth rates; India and the rest of the world have a long way to go to achieve meaningful population policy which are not only based on quantitative control but qualitative control as well.

Expected Question for UPSC CSE

Prelims MCQ

Que. With reference to the Civil Registration System (CRS), consider the following statements:

1. Registration of births and deaths is legally mandated under the Registration of Births and Deaths Act, 1969.
2. CRS data is used for monitoring the progress of Sustainable Development Goals.
3. CRS 2023 recorded an increase in the number of births compared to 2022.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Answer: (b)

CRIME IN INDIA REPORT 2023

Why in News: Recently, the Crime in India 2023 report was published by the **National Crime Records Bureau (NCRB)**.

Key Details

- **Overall Crime Trends:** India recorded **62.4 lakh cognizable crimes**, a 7.2% increase from 2022.
 - ✓ Of these, 37.6 lakh were under the IPC and 24.8 lakh under Special and Local Laws (SLL).
 - ✓ The **national crime rate** increased from 422.2 to 448.3 per lakh population.
 - ✓ In metropolitan cities, crime rose by 10.6% to 9.44 lakh cases, with theft accounting for 44.8%, followed by rash driving (9.2%) and obstruction on public ways (8.1%).
- **Changing Pattern of Crime:** Decline in traditional violent crimes such as rape and dowry deaths.
 - ✓ Surge in cybercrimes and urban-related offenses, reflecting social, technological, and lifestyle shifts.
 - ✓ **Cybercrimes rose sharply by 31.2% to 86,420 cases**, with nearly 69% involving online fraud.
 - ✓ Karnataka reported the highest number of cybercrime cases (21,889), followed by Telangana (18,236) and Uttar Pradesh (10,794).
- **Crimes against STs: Crimes against Scheduled Tribes** surged by 28.8%, from 10,064 in 2022 to 12,960 in 2023.

- **Crimes against Women: Crimes against women** saw a marginal rise of 0.4%, with most cases involving cruelty by husbands or relatives (29.8%), kidnapping (19.8%), and assault (18.7%).

Suggestions:

- The Crime in India 2023 report highlights the urgent need for reforms in response to the evolving nature of crime, particularly in the digital space.
- Key policy recommendations include strengthening cybercrime infrastructure through investments in digital forensic labs and public awareness campaigns, improving reporting mechanisms with anonymous channels and victim support, and training police in gender-sensitive and child-friendly protocols.
- It also calls for standardising crime classifications, enhancing inter-state coordination via a national crime analytics dashboard, and accelerating judicial processes with fast-track courts for cyber and gender-based cases.

About NCRB

- **Establishment:** 1986 on recommendations of the Tandon Committee, National Police Commission (1977-81), and MHA Task Force (1985).
- **Parent Ministry:** Ministry of Home Affairs (MHA).
- **Functions:** Acts as the national repository of crime and criminal data.
 - ✓ Manages the Crime and Criminal Tracking Network & Systems (CCTNS).
- **Publishes three major reports:** Crime in India, Accidental Deaths & Suicides, and Prison Statistics.

ALTERNATIVE DISPUTE RESOLUTION (ADR) IN INDIA

Why in News: The **Law and Justice Minister** emphasized the need for **global cooperation** to strengthen **Alternative Dispute Resolution (ADR) mechanisms**, referencing the **Panch Parmeshwar doctrine**, which advocates for **collective consensus** in **dispute resolution**.

What is Alternative Dispute Resolution (ADR) Mechanism?

About:

- **ADR** refers to processes for resolving disputes **outside courts**, offering a **faster, cheaper, and cooperative** alternative where parties work together for the **best resolution**.

Constitutional and Legal Basis:

- The **constitutional basis of ADR** in India is **Article 39A**, ensuring **equal justice and free legal aid**.
- ADR methods like **arbitration, conciliation, mediation, and Lok Adalat** are recognised under **Section 89 of the Code of Civil Procedure, 1908**.
- The **Arbitration and Conciliation Act, 1996** (amended 2021) allows **binding resolution** of civil and compoundable offences and establishes the **Indian Arbitration Council**, with a **180-day limit** for dispute resolution to ensure **faster justice**.

Models of ADR:

- **Arbitration:** Neutral third party makes a **binding decision**, commonly in **commercial disputes**, offering a **formal yet flexible** alternative.
- **Mediation:** **Impartial mediator** helps parties reach a **non-binding, cooperative solution**, preserving relationships.
- **Conciliation:** Like mediation but with **more intervention**, suggesting solutions for **family, business, and employment disputes**.
- **Negotiation:** **Informal, consensual** process where parties **directly agree**, giving **maximum control** over the outcome.
- **Lok Adalat: People's Courts** in India for **extrajudicial, amicable resolution** of **family, labor, and minor civil cases**.
 - ✓ **Lok Adalats**, governed by the **Legal Services Authorities Act, 1987**, were first held in **Gujarat in 1999**.
 - ✓ Their **decisions are final with no appeal**, as they resolve disputes **before formal litigation**, though their powers are not absolute.

Need for ADR:

- **Reducing Judicial Backlog:** India has **4.57 crore pending cases**, many delayed over **10 years**, causing **injustice**. **Strengthening ADR** offers a **faster alternative** to traditional litigation.
- **Accessible and Inclusive Justice:** ADR provides a **cost-effective, inclusive, pre-litigation** mechanism, allowing parties to resolve disputes **on their terms and in a familiar language**.

- **Addressing State-wise Disparities:** The **India Justice Report 2025** shows **high pending cases** and **disparities in infrastructure and judges** in states like **Andhra Pradesh, Uttar Pradesh, and Bihar**, highlighting the need for **robust ADR systems**.
- **Enhancing Justice Delivery:** With **33% High Court** and **21% district court vacancies**, **ADR mechanisms** are vital for **timely and effective access to justice**.
- **Global Alignment:** ADR is in alignment with **global standards**, such as the **United Nations Commission on International Trade Law (UNCITRAL) Model Law**, which ensures its compatibility with **international legal frameworks**.
 - ✓ **Foreign investors** often favor **ADR** due to its **neutrality, cost-effectiveness, and efficiency**, making it a key component in enhancing **India's engagement with the global economy**.

What are the Key Challenges Facing ADR in India & Suggest Measures to Address Them?

Challenges (Mnemonic: DELAY)	Measures (Mnemonic: CURES)
D - Deficit of Infrastructure: Inadequate institutional support, underutilization of legal provisions, and a lack of robust court-annexed ADR centres hinder accessibility.	C - Create Infrastructure: Establishing a nationwide network of accredited ADR centres and leveraging the Mediation Act, 2023, for structural support.
E - Enforcement & Trust Deficit: Perceptions of bias, power imbalances, and procedural delays in enforcement undermine trust in ADR outcomes.	U - Upskill & Educate: Launching public awareness campaigns and integrating ADR into legal education to make it a preferred first resort.
L - Legal Culture & Mindset: A deep-seated litigation mindset and low awareness about ADR's benefits among the public and legal professionals.	R - Regulate & Reinforce: Strengthening the regulatory framework for neutrals and ensuring time-bound enforcement of awards to build trust.
A - Absence of Quality Neutrals: A shortage of trained arbitrators and mediators, and a lack of uniform accreditation standards.	E - Elevate Standards: Empowering institutions to standardize training and enforce a strict code of conduct for ADR practitioners.
Y - Yielding to Procedural Complexity: Arbitration becoming as protracted as litigation (arbitration fatigue) and mediation being used for tactical delays.	S - Streamline Processes: Promoting fast-track mechanisms and imposing cost penalties for bad-faith participation to ensure genuine resolution.

Advantages of ADR in India

- **Reducing Court Congestion:** ADR mechanisms help alleviate the pressure on the judicial system by resolving disputes outside the traditional courtroom.
- **Cost-Effectiveness:** The cost of arbitration, mediation, and conciliation is often significantly lower than prolonged litigation.
- **Speedy Resolution of Disputes:** ADR processes like arbitration and mediation allow for quicker resolution, saving time for all parties involved.

- **Flexibility and Adaptability:** ADR methods offer customized, practical solutions that cater specifically to the interests of the disputing parties.
- **Confidentiality:** Privacy and confidentiality are maintained in ADR proceedings, which is critical for businesses and personal matters.

Disadvantages of ADR in India

- **Limited Scope for Complex Legal Issues:** ADR may not be suitable for cases involving complex legal questions or significant points of law, which require judicial interpretation by experienced judges.

- **Non-Binding Decisions (in Some Methods):** Methods like mediation and conciliation result in non-binding agreements, which rely on the parties' willingness to comply, potentially leading to enforcement challenges.
- **Lack of Formal Evidence Rules:** ADR processes often lack strict rules of evidence, which can lead to decisions based on incomplete or informal information, impacting fairness.
- **Imbalance of Power Between Parties:** If one party is more powerful or influential, they may dominate the proceedings, leading to an unjust resolution.
- **Lack of Precedent:** ADR decisions do not establish legal precedents, which limits their utility for resolving similar disputes in the future.
- **Limited Appeal Mechanism:** Decisions made through arbitration are binding and have restricted appeal options, which can be a disadvantage if the decision is perceived as unfair.
- **No Public Scrutiny:** ADR processes are private, which can lead to a lack of transparency and accountability compared to court trials, which are generally open to the public.
- **Costs Can Escalate:** While ADR is usually cost-effective, hiring skilled mediators or arbitrators can be expensive, especially for prolonged or contentious disputes.
- **Enforceability Issues (International Disputes):** Cross-border disputes may face challenges in enforcing ADR decisions, as they depend on international treaties or agreements like the New York Convention.

Conclusion

Alternative Dispute Resolution mechanisms in India – **Arbitration, Mediation, and Conciliation** – provide efficient, cost-effective, and amicable solutions to disputes. While arbitration offers a binding resolution, mediation and conciliation prioritize cooperative negotiation and settlement. Understanding these tools is vital for professionals, businesses, and individuals seeking quick, confidential, and cost-effective solutions outside conventional court proceedings.

RIGHT TO INFORMATION ACT, 2005 @ 20 YEARS

Why in News: The Right to Information (RTI) Act, 2005 completed **20 years of implementation in October 2025.**

Recent studies and reports have highlighted serious institutional, legislative, and operational challenges, indicating that India's transparency framework is under strain.

Key Details

- **RTI Act, 2005** was enacted to empower citizens to seek information from public authorities, promoting transparency, accountability, and good governance.
- The Act applies to **all levels of government**—central, state, and local—covering ministries, departments, PSUs, and government-funded bodies.
- It institutionalised the citizen's **right to know**, making information disclosure the rule and secrecy the exception. The **first RTI application** under the Act was filed by **Shahid Raza Burney in Pune.**
- The Act has played a transformative role in deepening **participatory democracy** and administrative accountability in India.

Key Provisions & Legal Architecture

- **Section 8(2): Public Interest Override**
 - ✓ Even exempt information can be disclosed if **public interest outweighs harm** to protected interests.
- **Section 22: Overriding Effect**
 - ✓ The RTI Act prevails over inconsistent provisions in other laws, reinforcing transparency.
- **Exemptions under Section 8(1)**
 - ✓ Information affecting sovereignty, national security, strategic, scientific or economic interests, foreign relations, or likely to incite an offence is exempted.

Achievements & Democratic Impact

- Enhanced scrutiny of public welfare schemes such as:
 - ✓ **MGNREGA expenditures**
 - ✓ **Public Distribution System (PDS)**
 - ✓ Local infrastructure and development projects
- Played a critical role in exposing major scams, including:
 - ✓ **Adarsh Housing Society scam**
 - ✓ **2G Spectrum scam**
 - ✓ **Commonwealth Games scam**
- Fostered a culture of **answerability among public officials**, knowing their actions are subject to public scrutiny.

Key Challenges and Structural Weaknesses

- **Administrative Delays & Pendency**

- ✓ In most Information Commissions, disposal time exceeds **one year**.
- ✓ Extreme cases include:
 - Telangana – ~29 years
 - Tripura – ~23 years
- **Vacancies & Defunct Information Commissions**
 - ✓ Between 2023–24, six commissions became defunct due to non-appointments.
 - ✓ Currently:
 - Jharkhand and Himachal Pradesh commissions are defunct
 - CIC, Chhattisgarh, and Andhra Pradesh lack a Chief Information Commissioner
- **Legislative Dilution of Autonomy**
 - ✓ **RTI (Amendment) Act, 2019** empowered the Central Government to determine tenure, salary, and service conditions of Information Commissioners, reducing their independence.
 - ✓ **Digital Personal Data Protection (DPDP) Act, 2023** amended Section 8(1), exempting personal data including that of public officials from disclosure.
- **Expansion of Exemptions & Secrecy Norms**
 - ✓ Frequent invocation of the **Official Secrets Act, 1923** to deny information.
 - ✓ Agencies such as **RAW, IB, and CERT-In** remain exempt under the Second Schedule of the RTI Act.
- **Threats to RTI Activists**
 - ✓ RTI users face harassment, intimidation, and violence.
 - ✓ Several activists have been attacked or killed.
 - ✓ **Whistleblower Protection Act, 2014** remains weakly implemented.

Way Forward: Strengthening the RTI Framework

- **Institutional Strengthening of Information Commissions**
 - ✓ Ensure transparent, time-bound appointments.
 - ✓ Provide adequate staff, infrastructure, and digital capacity.
 - ✓ Introduce performance benchmarks to reduce pendency.
- **Technology Integration & Digital RTI**
 - ✓ Use AI tools to assist citizens in drafting RTI applications.
 - ✓ Integrate RTI portals with **DigiLocker** and real-time tracking systems.

- ✓ Employ blockchain for data authenticity and tamper-proof records.
- **Strict Enforcement & Proactive Disclosure**
 - ✓ Enforce mandatory **Section 4 disclosures**.
 - ✓ Penalise PIOs for wrongful denial and delays.
 - ✓ Ensure timely submission of **Annual Reports under Section 25**.
- **Protection of RTI Users & Whistleblowers**
 - ✓ Fully operationalise the **Whistleblower Protection Act, 2014**.
 - ✓ Enable anonymous complaints, emergency safeguards, and fast-track courts.
 - ✓ Establish district-level support cells and legal aid mechanisms.
- **Restoring Institutional Autonomy**
 - ✓ Introduce parliamentary oversight in appointments.
 - ✓ Periodic judicial review by Supreme Court and High Courts to safeguard independence.

Conclusion

After two decades, the RTI Act remains a **cornerstone of democratic accountability** in India. However, administrative delays, legislative dilution, and threats to activists risk undermining its transformative potential. Revitalising the RTI framework is essential to uphold **transparent governance, informed citizenship, and the constitutional ethos of democracy**.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to the Right to Information (RTI) Act, 2005, consider the following statements:

1. Section 8(2) allows disclosure of exempt information if public interest outweighs the harm.
2. The RTI (Amendment) Act, 2019 reduced the fixed tenure and statutory independence of Information Commissioners.
3. All intelligence and security agencies are subject to full disclosure under the RTI Act.

Which of the statements given above are correct?

(a) 1 and 2 only
 (b) 2 and 3 only
 (c) 1 and 3 only
 (d) 1, 2 and 3

Answer: (a)

Why in News: The **Ministry of Panchayati Raj** has launched the **People's Plan Campaign (PPC) 2025–26** across all States and Union Territories to initiate the nationwide preparation of **Panchayat Development Plans (PDPs)** for the **Financial Year 2026–27**.

Key Details

- **People's Plan Campaign (PPC)**, also known as **Jan Yojana Abhiyan**, was launched on **2 October 2018** to institutionalise participatory, transparent, and accountable planning at the grassroots level.
- The campaign enables preparation of **Panchayat Development Plans (PDPs)** at:
 - ✓ Gram Panchayat level (GPDPs)
 - ✓ Block level (BPDPs)
 - ✓ District level (DPDPs)
- PPC operationalises **Article 243G of the Constitution**, empowering Panchayats to plan and implement programmes for economic development and social justice.
- According to the **eGramSwaraj Portal**, over **18.13 lakh PDPs** have been uploaded between **2019–20 and 2025–26**, reflecting large-scale citizen participation.

Objectives & Core Components

- **Participatory & Inclusive Planning**
 - ✓ Ensure community participation through **Gram Sabhas**, involving citizens, SHGs, and Women Elected Representatives (WERS).
- **Localization of Sustainable Development Goals (LSDGs)**
 - ✓ Integrate the **nine thematic approaches of SDGs** into Panchayat plans:
 - Poverty-free
 - Healthy
 - Child-friendly
 - Water-sufficient
 - Clean & Green
 - Self-sufficient infrastructure
 - Socially secured
 - Good governance
 - Women-friendly villages
- **Convergence-Based Development**

- ✓ Align Central and State schemes for optimal use of resources and avoidance of duplication.

- **Transparency & Accountability**

- ✓ Ensure public disclosures, information campaigns, and Gram Sabha-based approvals of plans.

PPC 2025–26: Key Highlights

- **Review & Prioritisation of Projects**
 - ✓ Gram Sabhas will review earlier GPDPs using:
 - eGramSwaraj Portal
 - Meri Panchayat App
 - Panchayat NIRNAY
 - ✓ Focus on completing **unfinished works**, especially those linked to **unspent Central Finance Commission grants**.
- **Panchayat Advancement Index (PAI)**
 - ✓ Planning guided by **PAI**, supported by **SabhaSaar**, to improve governance outcomes.
 - ✓ Emphasis on enhancing **Own Source Revenue (OSR)** and citizen engagement.
- **Tribal & Inclusive Development**
 - ✓ Special focus on **tribal empowerment** through **Adi Karmayogi Abhiyaan**.
 - ✓ Strengthens inclusivity, accountability, and equitable rural development.

Role of Panchayats in India's Development Framework

- **Constitutional Role**
 - ✓ Institutionalised under the **73rd Constitutional Amendment Act, 1992**.
 - ✓ Gram Panchayat serves as the foundational unit of decentralized governance.
- **Service Delivery & Welfare**
 - ✓ Responsible for basic services such as:
 - Drinking water
 - Sanitation
 - Rural roads
 - Street lighting
 - Health, education, and nutrition
- **Development Planning**
 - ✓ Annual GPDPs prepared through participatory Gram Sabhas.
 - ✓ Cover **29 subjects of the Eleventh Schedule**.
 - ✓ BPDPs and DPDPs ensure convergence and scaling.
- **People-Centric Planning**

- ✓ **Self-Help Groups (SHGs)** contribute through **Village Prosperity and Resilience Plans (VPRPs)**.
- ✓ Encourages gender-sensitive and socially inclusive planning.

Key Challenges & Constraints

- **Capacity Deficit**
 - ✓ Lack of trained personnel and technical expertise in Gram Panchayats, as noted by the **Second Administrative Reforms Commission**.
- **Weak Financial Autonomy**
 - ✓ Panchayats generate only about **1% of revenue through taxes**.
 - ✓ Heavy dependence on Central and State grants limits flexibility.
- **Fund Flow Issues**
 - ✓ Delays and non-receipt of funds under key schemes affect implementation.
- **Digital Divide**
 - ✓ Poor connectivity in remote areas hampers e-governance and real-time monitoring via digital platforms.
- **Weak Inter-Departmental Convergence**
 - ✓ Fragmented implementation across schemes reduces holistic development outcomes.

Way Forward: Strengthening People's Planning

- **Capacity Building**
 - ✓ Train Panchayat officials and facilitators through **State Institutes of Rural Development & Panchayati Raj (SIRD&PRs)**.
- **Strengthening Own Source Revenue (OSR)**
 - ✓ Incentivise OSR mobilisation and adopt **performance-linked grants** as recommended by the **15th Finance Commission**.
- **Digital Infrastructure Expansion**

- ✓ Expand **BharatNet** connectivity.
- ✓ Train stakeholders in using eGramSwaraj, Panchayat NIRNAY, and Meri Panchayat App.
- **Institutionalised Convergence**
 - ✓ Establish convergence cells at block and district levels.
 - ✓ Integrate schemes like **MGNREGA, PM Awas Yojana, Swachh Bharat Mission (SBM), and health programmes**, as demonstrated under **PM Dhan-Dhaanya Krishi Yojana (PMDDKY)**.

Conclusion

The **People's Plan Campaign (PPC)** represents a transformative shift towards **citizen-led, decentralized development planning**. By strengthening Panchayats as engines of local governance, PPC advances the constitutional vision of grassroots democracy and ensures that national development goals translate into tangible outcomes at the village level.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to the People's Plan Campaign (PPC), consider the following statements:

1. It aims to institutionalise participatory planning through Panchayat Development Plans.
2. It supports the localisation of Sustainable Development Goals at the grassroots level.
3. Panchayat Advancement Index (PAI) is used to guide planning and performance assessment.

Which of the statements given above are correct?

(a) 1 and 2 only
 (b) 2 and 3 only
 (c) 1 and 3 only
 (d) 1, 2 and 3

Answer: (d)

INTERNATIONAL RELATIONS

WASSENAAR ARRANGEMENT

Why in News: There has been an increasing call for the need to reform export control regime under the Wassenaar arrangement.

Key Details

- The Wassenaar Arrangement (WA) was established in 1996 as a multilateral export-control regime to regulate the transfer of conventional arms and “dual-use” goods and technologies (i.e. items with both civilian and military applications).
- The goal was to promote international stability by ensuring that exports of sensitive technologies do not contribute to

destabilizing military build-ups or proliferation, and to prevent such items from falling into the hands of terrorists or rogue actors.

- The WA functions via agreed “control-lists” maintained by member states; transfers of listed items require export licences and regular reporting among members. As of 2025, there is growing debate that the WA’s framework is increasingly out of step with modern technological realities.
- The call for reform arises in view of challenges posed by cloud computing, AI, cyber-surveillance, and remote delivery of services — all of which strain the conventional export control model.

Key Highlights

Challenge	Implication / Risk
Narrow, hardware-centric export definition	Software, cloud services, remote access, AI models despite their dual-use potential often escape WA-mandated controls. This leaves scope for misuse (e.g. surveillance, intrusion) without oversight.
Voluntary & consensus-based regime	Because WA is not legally binding, compliance depends on national laws and political will. Any one member can block reforms, slowing adaptation. Enforcement is uneven across countries.
Slow adaptation to technological change	WA’s periodic updates are too sluggish for fast-evolving fields like AI, cloud, cyber-tools. By the time new items are added, technology may already have advanced or spread.
Lack of human-rights and end-use safeguards	Existing licensing often centers on military/WMD use insufficient for digital tools that may be used for mass surveillance, repression, or violations of privacy and civil rights.
Fragmented national implementation	Different countries interpret and apply WA control lists differently, leading to loopholes, “security-research” exceptions, or internal transfers escaping oversight.

Reforms & Way Forward

- Expand the scope of “controlled technologies”: Include cloud infrastructure, software-as-a-service platforms, AI systems, data-surveillance tools, biometric systems, cross-border data-flows not only hardware/systems.
- **Redefine “export” for digital era:** Treat remote access, API-based delivery, administrative/privileged access, and

cloud hosting (not just physical shipment) as subject to export controls.

- **Make WA binding and enforce minimum standards:** Move beyond voluntary commitments to a treaty-like framework with mandatory licensing norms, peer review, standardized implementation, and oversight mechanisms.

- **Introduce end-use and human-rights based licensing criteria:** Licensing should consider who is using the technology, where, for what purpose, under what oversight not just the nature of the item, but its potential for misuse in civilian contexts (surveillance, repression, profiling).
- **Establish agile and responsive governance:** Create a dedicated technical committee or secretariat that can fast-track inclusion of new items (e.g. AI, cyber tools), issue interim controls, and update lists more frequently rather than waiting for annual plenary consensus.

Conclusion

The Wassenaar Arrangement was conceived in a world dominated by physical arms and hardware exports. That model made sense in the late 20th century. But today's reality driven by cloud computing, AI, cyber-surveillance, and digital services is fundamentally different. The distinction between "export" and "usage" has blurred; many sensitive technologies are delivered virtually, across borders, in ways the original WA framers likely did not anticipate.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to the Wassenaar Arrangement (WA), consider the following statements:

1. The Wassenaar Arrangement is a legally binding treaty that mandates uniform export-control laws across all member states.
2. The Arrangement primarily focuses on regulating transfers of conventional arms and dual-use goods and technologies.
3. One of the key challenges facing the WA today is its inability to effectively regulate cloud-based and software-driven exports.
4. All decisions in the Wassenaar Arrangement are taken through majority voting to ensure faster adaptation to technological changes.

Which of the statements given above is/are correct?

- (a) 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 4**

Answer (c)

UNSC RESOLUTION 1325

Why in News: UN Women chief urges world to deliver on 25-year-old resolution.

Key Details

- The year 2025 marks the 25th anniversary of the landmark United Nations Security Council Resolution (UNSCR) 1325, adopted in 2000, which recognised the decisive role of women in conflict prevention, peace negotiations, peacebuilding, and post-conflict recovery.
- At a recent briefing to the UN Security Council, UN Women Executive Director Sima Bahous urged member states to translate this anniversary into meaningful action. She warned of worsening global conflicts, shrinking civic space, rising misogyny, and under-investment in women-led peace initiatives.

Key Highlights

- **Rising Conflict Exposure for Women**
 - ✓ Conflict-affected zones have expanded, exposing millions of women and girls to violence, displacement, loss of livelihood, and restricted access to basic services.
 - ✓ Humanitarian support is diminishing even as gender-specific vulnerabilities rise.
- **Stagnation in Implementing UNSCR 1325**
 - ✓ Despite 25 years of commitments, implementation remains **uneven, symbolic, and poorly funded**.
 - ✓ Many national action plans exist on paper but lack resources, accountability mechanisms and political will.
- **Evidence: Women's Participation Strengthens Peace**
 - ✓ Research shows that peace agreements negotiated with meaningful inclusion of women are **more durable and less likely to relapse**.
 - ✓ Examples from Haiti, Chad, Syria, Ukraine and parts of Africa demonstrate how women leaders have mediated conflicts, facilitated local ceasefires, and advocated gender-responsive reconstruction.
- **Backlash Against Gender Equality**
 - ✓ The global rise of extremism, misinformation, online abuse, and anti-rights movements threatens gender equality gains.
 - ✓ Digital spaces have become new arenas of violence, further restricting women's voices in political and peace processes.
- **Call for Renewed Commitments**
 - ✓ Bahous emphasised:

- Ensuring women’s representation in higher political and peacebuilding leadership positions.
- Funding women-led grassroots peace organisations.
- Ending impunity for crimes against women in conflict.
- Strengthening access to justice, reparations, and accountability systems.
- Embedding the women-peace-security agenda among young people.

Key Challenges

● Chronic Underfunding

- ✓ Less than 1% of financial flows in peacebuilding goes to women-led organisations.
- ✓ Humanitarian budgets are shrinking as conflicts multiply.

● Tokenistic Participation

- ✓ Women are often included symbolically without real decision-making power.
- ✓ Peace tables remain male-dominated, with only a small fraction of women negotiators.

● Rising Gender-Based Violence

- ✓ Conflict-related sexual violence, trafficking, and tech-facilitated abuse have increased, yet justice systems remain weak.

● Weak Accountability

- ✓ Most states lack mechanisms to track progress on UNSCR 1325 indicators — representation, protection, and prevention.
- ✓ Violations often go unpunished due to geopolitical interests.

● Declining Multilateralism

- ✓ Growing distrust in multilateral institutions weakens collective support for women-centred peace initiatives.

Way Forward

● Strengthen Political Commitment and Leadership

- ✓ Governments must integrate UNSCR 1325 into national security, defence, foreign policy and development agendas.
- ✓ Affirmative action should be institutionalised to ensure **at least 30–50% representation of women** in peace negotiations and security institutions.

✓ Ensure Sustainable Financing

- ✓ Establish dedicated global and national funding pools for women peacebuilders.
- ✓ Encourage private philanthropy, international development banks, and climate financing mechanisms to support gender-responsive peacebuilding.

● Enhance Protection and Justice Mechanisms

- ✓ Strengthen laws, judicial processes and monitoring systems to address conflict-related gender violence.
- ✓ Ensure survivor-centric reparations and prosecution of perpetrators at national and international levels.

● Promote Digital Safety and Inclusion

- ✓ Counter online hate, harassment, and disinformation targeting women leaders.
- ✓ Expand digital literacy and secure platforms for women human-rights defenders.

● Leverage Grassroots and Youth Movements

- ✓ Engage women’s community organisations, youth groups, and local peace committees to make the peace process inclusive and sustainable.
- ✓ Integrate WPS (Women, Peace & Security) agenda into education and civic programmes.

● Strengthen Multilateral Cooperation

- ✓ Reinforce UN-led peace missions with gender expertise.
- ✓ Encourage cross-country learning on best practices in women-led peace processes.

Conclusion

Twenty-five years after UNSCR 1325, the world stands at a crossroads. While the evidence is clear that **women’s leadership improves peace outcomes**, structural inequalities, conflict escalation and policy inertia continue to hinder real progress. The anniversary presents an opportunity to **shift from rhetoric to action**, ensuring that women are not merely victims of conflict but central architects of global peace and security.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to United Nations Security Council Resolution (UNSCR) 1325, consider the following statements:

1. It is the first UNSC resolution that formally recognised the role of women in peace and security processes.

2. It mandates all member states to ensure at least 50% reservation for women in national parliaments.
 3. It emphasises prevention of conflict-related sexual violence and protection of women in armed conflict.
- Which of the statements given above is/are correct?
- (a) 1 only
 - (b) 1 and 3 only
 - (c) 2 and 3 only
 - (d) 1, 2 and 3

Answer: b

INDIA-UK CONNECTIVITY & INNOVATION CENTRE

Why in News: India and UK Forge Strategic Partnership with the Launch of the India-UK Connectivity & Innovation Centre.

Key Details

- India and the United Kingdom have launched the India-UK Connectivity and Innovation Centre, marking a significant step in deepening bilateral cooperation in advanced telecommunications.
- The initiative comes under the broader India-UK Technology Security Initiative, aimed at fostering secure, resilient and future-ready telecom ecosystems.

Key Highlights

- **Joint Funding Commitment**
 - ✓ India and the UK have committed £24 million over four years.
 - ✓ Funding is directed towards applied research, testbeds, prototypes, and academic–industry collaborations.
- **Focus on Cutting-Edge Telecom Technologies**
 - ✓ **AI-enabled Network Optimisation:** Leveraging AI/ML to improve network efficiency, reduce congestion, and enable new services.
 - ✓ **Non-Terrestrial Networks (NTNs):** Development of satellite-based and airborne communication networks for robust last-mile connectivity in remote and underserved areas.
 - ✓ **Telecom Cybersecurity:** Creation of secure, interoperable systems ensuring safety of consumers, enterprises and national infrastructure.
- **Market-Oriented R&D**
 - ✓ The Centre is designed not only for laboratory research but for commercialisation pathways, enabling rapid deployment of innovations.

- ✓ Emphasis on global telecom standards and interoperability to support India's 6G vision.

- **4. Strengthening India–UK Strategic Technology Partnership**

- ✓ Enhances cooperation in secure telecom supply chains, standards, skill development and joint innovation.
- ✓ Aligns with India's goals of digital public infrastructure expansion and Atmanirbhar Bharat in telecom equipment and R&D.

Key Challenges

- **Ensuring Cybersecurity in an Expanding Telecom Ecosystem**
 - ✓ As networks integrate AI and satellite-based systems, the attack surface expands significantly.
 - ✓ The challenge lies in ensuring robust encryption, supply-chain security and real-time threat detection.
- **High Cost and Complexity of NTN Deployment**
 - ✓ Satellite-based communication systems involve high capital expenditure, complex regulatory processes, and dependence on global supply chains.
 - ✓ Integrating NTNs with terrestrial networks requires intensive testing and standardisation.
- **Bridging Skill Gaps in Deep-Tech Telecom R&D**
 - ✓ India needs a larger pool of skilled researchers and engineers in advanced telecom domains like 6G, quantum communication and AI-driven network management.
- **Regulatory and Spectrum-Allocation Constraints**
 - ✓ Emerging technologies—especially NTNs and AI-driven systems—require updated policies, spectrum frameworks, and safety guidelines.
 - ✓ Harmonising India's regulatory norms with global standards remains a challenge.
- **Commercialisation and Industry Adoption**
 - ✓ Translating R&D outputs into commercially viable products hinges on industry participation, investment confidence, and large-scale testbeds.

Way Forward

- **Strengthening R&D Ecosystem**
 - ✓ Increased funding for universities, startups and research labs working in 6G, cybersecurity and NTNs.
 - ✓ Promote open-source platforms and standard-setting participation.

- **Building Secure and Resilient Telecom Infrastructure**
 - ✓ Create robust cyber-resilience frameworks, including secure supply-chain protocols, indigenous components, and continuous monitoring systems.
- **Accelerating Satellite and NTN Integration**
 - ✓ Streamline licensing, spectrum allocation and satellite-ground integration policies.
 - ✓ Encourage PPP models for satellite connectivity in underserved areas.
- **Enhancing Talent Development**
 - ✓ Launch joint India-UK fellowship programmes, skill-building courses, and industry-linked research internships in emerging telecom domains.
- **Promoting Industry-Academia Collaboration**
 - ✓ Build pilot testbeds and innovation clusters that bring together telecom operators, startups, academia, and global standards bodies.
- **Ensuring Inclusive and Affordable Connectivity**
 - ✓ Prioritise rural and remote regions in deployment strategies.
 - ✓ Encourage indigenous manufacturing to reduce costs and import dependence.

Conclusion

The India-UK Connectivity & Innovation Centre represents a forward-looking step in building a secure, innovative and inclusive telecom future. By combining India's scale and digital public infrastructure with the UK's technological strengths, the initiative has the potential to accelerate next-generation connectivity solutions from AI-driven networks to satellite-based communication. Addressing regulatory, cybersecurity, and skill-development challenges will be essential for translating this partnership into tangible outcomes for national development and global digital leadership.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. Consider the following statements regarding the India-UK Connectivity & Innovation Centre:

1. It has been launched under the India-UK Technology Security Initiative.
2. It aims to support research only in terrestrial communication networks.
3. It is jointly funded by both governments.

Which of the statements given above is/are correct?

- (a) 1 and 3 only
- (b) 2 and 3 only
- (c) 1 and 2 only
- (d) 1, 2 and 3

Answer: a

EXERCISE 'SAMUDRA SHAKTI' – 2025

Why in News: Indian Navy hosts fifth edition of bilateral exercise 'samudra shakti' – 2025 with Indonesian navy at Visakhapatnam.

Key Details

- India and Indonesia two major maritime nations straddling the **Indian Ocean and the Western Pacific** have steadily enhanced defence cooperation in line with India's Act East Policy and the shared vision for a **Free, Open, Inclusive Indo-Pacific**. The **5th edition of Exercise Samudra Shakti (14–17 October 2025)**, held at **Visakhapatnam**, signifies the deepening naval partnership between the two countries.
- In the backdrop of:
 - ✓ Intensifying geopolitical contestation in the Indo-Pacific
 - ✓ Growing non-traditional maritime threats (piracy, trafficking, illegal fishing)
 - ✓ The strategic importance of sea lanes passing through the Indonesia-India maritime continuum the exercise is a critical platform for enhancing **interoperability, tactical cooperation, and regional maritime stability**.

Key Highlights of Samudra Shakti-2025

- **Participating Assets**
 - ✓ **Indian Navy:** INS Kavaratti (anti-submarine warfare corvette)
 - ✓ **Indonesian Navy:** KRI John Lie (corvette with onboard helicopter)
- **Phases of the Exercise**
 - ✓ Harbour Phase (Visakhapatnam)
 - ✓ Sea Phase
- **Key Objectives**
 - ✓ Enhance **interoperability** between the two navies
 - ✓ Strengthen **tactical coordination and operational synergy**

- ✓ Facilitate **exchange of best practices**
- ✓ Improve readiness for **HADR (Humanitarian Assistance & Disaster Relief)** and **maritime security contingencies**
- ✓ Reinforce shared commitment to **maritime stability in Indo-Pacific**

• **Strategic Significance**

- ✓ Strengthens maritime partnership with a key ASEAN nation
- ✓ Reinforces India's role as a **net security provider** in the region
- ✓ Expands defence cooperation under the Comprehensive Strategic Partnership (India-Indonesia)
- ✓ Complements joint initiatives like the **India-Indonesia Coordinated Patrol (IND-INDO CORPAT)**
- ✓ Enhances ability to jointly respond to regional maritime threats
- ✓ Aligns with India's vision of **SAGAR (Security and Growth for All in the Region)**

Major Joint Military Exercises of India with Foreign Countries

Exercise	Partner Country / Group	Service
Malabar	USA, Japan, Australia (Quad)	Navy
Garuda	France	Air Force
Varuna	France	Navy
Mitra Shakti	Sri Lanka	Army
Sampriti	Bangladesh	Army
Surya Kiran	Nepal	Army
Yudh Abhyas	USA	Army
Cope India	USA	Air Force
Red Flag	USA	Air Force
Lamitre	France	Army
Sahyog-Kaijin	Japan	Coast Guard
Dharma Guardian	Japan	Army

JIMEX	Japan	Navy
Ekatha	Maldives	Army
Ekuverin	Maldives	Army
Konkan	United Kingdom	Navy
Indradhanush	United Kingdom	Air Force
Ajeya Warrior	United Kingdom	Army
Indra	Russia	Tri-service
Aviandra	Russia	Air Force
Hand-in-Hand	China	Army
Nomadic Elephant	Mongolia	Army
Al-Najah	Oman	Army
Naseem-al-Bahr	Oman	Navy
Eastern Bridge	Oman	Air Force
Desert Eagle	UAE	Air Force
Zayed Talwar	UAE	Navy
Khanjar	Kyrgyzstan	Army
KazInd	Kazakhstan	Army
Harimau Shakti	Malaysia	Army
VINBAX	Vietnam	Army
Samudra Shakti	Indonesia	Navy
CORPAT (Coordinated Patrol)	Indonesia, Thailand, Myanmar, Bangladesh	Navy
IMTTR (Tri-Service Exercise)	Russia	Tri-service
MILAN	Multinational	Navy

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to India's joint defence exercises, consider the following statements:

1. 'Mitra Shakti' is a joint army exercise with Sri Lanka.
2. 'Harimau Shakti' is conducted with Malaysia.

3. 'Nomadic Elephant' is a naval exercise with Mongolia.

How many of the statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Answer: b (1 & 2 only)

US-CHINA TRADE TENSIONS

Why in News: China blames the U.S. for raising trade tensions and defends rare earth curbs.

Key Details

- In October 2025, China publicly accused the United States of heightening trade tensions following Washington's decision to impose additional tariffs on a range of Chinese imports.
- In response, China defended its newly introduced export restrictions on rare-earth materials—critical inputs in semiconductors, defense technologies, electric vehicles, and renewable-energy systems.
- While China adopted strong diplomatic language, it avoided immediate tit-for-tat tariff retaliation. The episode marks yet another phase in the long-running strategic, technological, and trade contest between the world's two largest economies.

Key Highlights of the Development

- **China blames the U.S. for escalating trade tensions**
 - ✓ China accused the U.S. of taking unilateral and protectionist actions through tariff hikes.
 - ✓ Beijing argued that Washington's measures undermine global trade rules and destabilize markets.
- **China defends its rare-earth export controls**
 - ✓ China framed the export restrictions as **national-security measures**, not economic retaliation.
 - ✓ These controls limit the export of certain rare-earth technologies and materials that the U.S. heavily relies upon.
 - ✓ Rare-earths are indispensable for electronics, green technologies, and advanced military systems.
- **Avoidance of immediate tariff retaliation**
 - ✓ Despite harsh rhetoric, China refrained from imposing immediate reciprocal tariffs.

✓ This signals a calibrated approach—balancing domestic expectations, global investor confidence, and diplomatic manoeuvring.

- **Implications for global supply chains**

- ✓ The rare-earth decision has major implications for industries dependent on Chinese processing capacities.
- ✓ Countries such as Japan, South Korea, India, and European states remain vulnerable to supply disruptions.

- **Geopolitical backdrop**

- ✓ The episode reflects the broader **U.S.–China strategic rivalry** spanning trade, technology, semiconductors, green energy, and the Indo-Pacific's geoeconomic space.
- ✓ Both nations are racing for dominance in emerging technologies where rare-earth materials are crucial.

Key Challenges for World

- **Overdependence on China for Critical Minerals**

- ✓ China controls ~60–70% of global rare-earth production and nearly 85–90% of processing.
- ✓ Export curbs expose supply-chain vulnerabilities for high-tech, defense, and green-energy industries worldwide.

- **Escalating Protectionism**

- ✓ Tariff increases and national-security-based export controls by major global powers increase systemic uncertainty.
- ✓ Protectionist cycles disrupt global markets, raise production costs, and weaken multilateral trade norms.

- **Supply-chain Fragility**

- ✓ Sectors such as EVs, renewable energy, robotics, AI hardware, and weapons systems are at risk of high input costs and technical bottlenecks.

- **Erosion of WTO-based Multilateralism**

- ✓ Both nations increasingly bypass WTO dispute-settlement mechanisms.
- ✓ This undermines rule-based global trade governance.

- **Potential for Wider Geopolitical Spillover**

- ✓ Trade tensions can spill into diplomatic, technological, and military domains.
- ✓ Smaller economies may be forced to align with either bloc, threatening global economic stability.

- **Impact on Developing Countries**

- ✓ Volatile commodity prices, costlier technology imports, and disrupted manufacturing chains affect developing economies disproportionately.

Way Forward

- **Strengthen Multilateral Trade Forums**

- ✓ Revitalizing WTO reforms and dispute-settlement mechanisms is essential.
- ✓ Major economies must commit to transparent and predictable trade behaviors.

- **Diversification of Supply Chains**

- ✓ Countries should invest in:
 - Rare-earth mining
 - Processing facilities
 - Recycling capabilities
- ✓ Quad partners, EU, and ASEAN could deepen cooperation for supply-chain resilience.

- **Promote Technological Self-Reliance**

- ✓ Nations must enhance domestic capabilities in semiconductors, critical minerals, and advanced manufacturing to reduce vulnerability.

- **Encourage Diplomatic Engagement**

- ✓ Structured dialogues between the U.S. and China can prevent miscalculations.
- ✓ Confidence-building measures and sector-specific agreements (e.g., rare-earth supply guarantees) are essential.

- **Support for Developing Countries**

- ✓ Multilateral bodies (World Bank, UNIDO, ADB) should help emerging economies build technological capacity to withstand global shocks.

- **India's Opportunity**

- ✓ India can leverage its mineral resources, skills, and geopolitical positioning to:
 - Expand rare-earth processing
 - Invite global tech investments
 - Strengthen frameworks like the **PLI scheme**, **National Mineral Policy**, and **India-Australia Critical Minerals Partnership**.

Conclusion

China–U.S. trade tensions represent more than tariff disputes; they signify a deeper contest for technological supremacy and strategic influence. China's rare-earth export controls and the U.S. tariff escalations highlight the vulnerability of global

supply chains in an era of geopolitical competition. Strengthening multilateralism, diversifying critical mineral supply chains, and promoting cooperative diplomatic mechanisms are essential to ensure global economic stability and reduce systemic risks.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. Consider the following statements regarding rare-earth elements (REEs):

1. China accounts for the majority of global rare-earth processing capacity.
2. Rare-earth elements are essential for manufacturing semiconductors, electric vehicles, and defense systems.
3. The United States is the largest producer of rare-earth oxides in the world.

Which of the above statements is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 only
- (d) 1, 2, and 3

Answer: (a)

INDIA-MIDDLE EAST-EUROPE ECONOMIC CORRIDOR (IMEC)

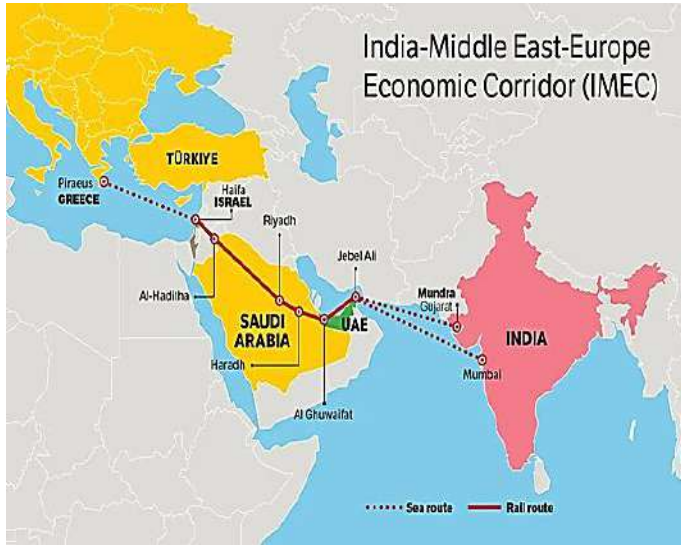
Why in News: The situation in West Asia demands that the corridor's routes adapt to political dynamics.

Key Details

- IMEC was launched via a Memorandum of Understanding in September 2023 during the G20 Summit in New Delhi. Signatories include India, several Gulf states, European Union members and the United States, reflecting a broad multilateral backing.
- It is a strategic infrastructure and connectivity initiative at the intersection of economics, geopolitics, and long-term global integration.
- The corridor emerges at a time when global trade and supply-chain disruptions, vulnerabilities of traditional maritime chokepoints (such as the Red Sea and the Suez Canal), and changing geopolitics have underscored the need for diversified, resilient connectivity routes.
- For India, IMEC aligns with its aspirations of becoming a globally integrated economy, strengthening trade-linkages

with the Middle East and Europe, reducing logistics costs, and enhancing strategic influence.

Key Features & Strategic Significance



- **Multimodal Connectivity: Ports, Rail, Energy, Digital**
 - ✓ The envisaged corridor combines sea and rail routes western Indian ports linking to Gulf ports; from there, freight would move via high-speed rail through Gulf states, possibly via Saudi Arabia and Jordan, to a Mediterranean transit point (e.g. Israel’s Haifa), and from there maritime/land links to Europe.
 - ✓ Beyond conventional goods transport, IMEC aims to foster green energy infrastructure, digital connectivity (subsea cables), and clean-energy pipelines (e.g. hydrogen) thus integrating transport with energy and data infrastructure.
 - ✓ This makes IMEC a potential “green + digital bridge” across continents, aligning with global trends of sustainable growth and decarbonisation.
- **Economic Efficiency, Supply-chain Resilience & Market Access**
 - ✓ Estimates suggest that IMEC could reduce transit time compared to traditional sea routes (via Red Sea/Suez Canal) by up to ~40%, improving speed and efficiency of India–Europe cargo flows.
 - ✓ It promises lower trade and logistics costs, potentially making Indian exports more competitive, while also facilitating smoother imports and supply-chain integration.
 - ✓ For India and participating countries, IMEC could stimulate industrialisation, port-led development, investment flows, trade expansion and economic growth along the corridor.

- **Geopolitical and Strategic Imperatives**

- ✓ For India, IMEC is a strategic lever: it helps diversify trade routes, reduce dependence on fragile maritime chokepoints, and strengthen ties with Gulf and European nations — consolidating India’s global economic outreach.
- ✓ The corridor is viewed as part of a broader global connectivity architecture — offering an alternative to other mega-corridor initiatives and enhancing supply-chain resilience in a volatile global environment.
- ✓ Through integration of energy, transport and digital infrastructure, IMEC also supports long-term objectives like clean energy transition and sustainable development — especially relevant for India’s climate and energy goals.

Key Challenges and Roadblocks

- **Geopolitical Instability & Security Risks**

- ✓ The corridor traverses a geopolitically sensitive region — West Asia — where conflicts, political instability, and tensions (e.g. between Israel and neighbouring states) pose serious risks. For instance, ongoing tensions following the Gaza conflict have cast doubts on the feasibility of the planned rail-through-Israel route.
- ✓ The volatility of maritime routes (due to risks in Red Sea, Gulf, or political disruptions) can disrupt continuity of trade.

- **Implementation Complexity: Infrastructure, Integration & Coordination**

- ✓ Building a truly integrated multimodal corridor involving ports, rail networks, energy pipelines and digital cables across multiple sovereign nations demands high levels of coordination, standardisation of regulations, and alignment of trade, customs and legal frameworks which is challenging given diverse administrative systems.
- ✓ Key stretches especially rail links across Middle East are either missing or underdeveloped. Completing this will require massive infrastructure investments, long lead times, and cooperation among multiple stakeholders.

- **Financial Viability & Investment Uncertainty**

- ✓ Estimates of financing needs for such a corridor run very high; yet a clear, consensus-based financial roadmap or cost-sharing model among participating countries is lacking.
- ✓ Given the long-term horizon, shifting global economic conditions, risk perceptions, and return on investment uncertainties might deter private-sector participation, potentially stalling key segments.
- **Dependence on Regional Politics, Diplomacy & Stability for Sustainability**
 - ✓ The success of IMEC critically depends on stable political relations among corridor nations, peace in conflict-prone zones, and consistent diplomatic cooperation factors often beyond immediate control and vulnerable to regional upheavals.
 - ✓ Further, trust and shared long-term commitment across countries are essential; a breakdown in coordination by one actor may jeopardize the entire corridor's viability.

Way Forward

- **Adopt a modular and flexible corridor design:** Rather than a single rigid route (e.g. via Haifa), build alternate legs using different ports, rail and maritime paths, including Gulf and Mediterranean ports in Saudi Arabia, UAE, Egypt, Greece, Italy, etc., to diversify risk and ensure resilience.
- **Establish a permanent multilateral coordination mechanism:** A joint governance framework involving all participating countries to synchronise planning, regulatory harmonisation (customs, tariffs, standards), security protocols, and logistics operations.
- **Mobilise blended financing:** Public-private partnerships & multilateral funds attract global investors, infrastructure funds and multilateral agencies; combine public funding, private investment, and multilateral development financing to spread risk and ensure financial sustainability.
- **Prioritise soft-infrastructure:** Trade facilitation, digital & regulatory linkages invest in customs harmonisation, digital trade platforms, regulatory standardisation, transparent trade policies; these can accelerate trade even before full physical infrastructure is completed.
- **Leverage green & digital components:** Energy, hydrogen, digital cables build on IMEC's vision of a green + digital corridor, aligning with global sustainability goals and

India's energy transition; this can attract climate-finance, green investors, and position India as a future energy and data export hub.

- **Maintain proactive diplomacy and regional stability efforts:** Support conflict resolution, promote regional cooperation, and build strategic trust among corridor partners; ensure IMEC remains insulated from geopolitical shocks via alternate routes and contingency plans.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. Which of the following are part of IMEC's intended infrastructure/connectivity components? (multiple correct)

1. Ports and maritime links
2. Rail networks across Middle East and Europe
3. Energy pipelines / clean energy infrastructure
4. Undersea digital cables for data connectivity

Select the correct points using the codes given below:

- (a) 1 & 2 only
- (b) 1, 2 & 3 only
- (c) 1, 2 & 4 only
- (d) 1, 2, 3 & 4

Answer: d

ECONOMY & AGRICULTURE

INDIA'S LONG HISTORY OF RESISTANCE TO ECONOMIC DOMINATION

Why in News: Trade negotiations between India and the United States remain stalled after President Trump's administration doubled tariffs on Indian goods to 50% and imposed an additional 25% duty on Russian oil imports by India.

Key Details

- From colonial exploitation to present-day protectionism, India has consistently resisted asymmetric and externally imposed economic arrangements.
- India's economic evolution shows adaptability—balancing openness with sovereignty to safeguard national interests.

Colonial Economic Exploitation and India's Resistance

- **Transformation of Economy:** The **British colonial system** dismantled India's self-sufficient agrarian and artisanal base, converting the country into a **supplier of raw materials** and a **market for British-manufactured goods**.
- **Drain Theory and Fiscal Exploitation:** **Dadabhai Naoroji**, in *Poverty and Un-British Rule in India* (1901), argued that **India's wealth was drained to Britain**, financing its prosperity: "The British Indian Empire is formed and maintained entirely by Indian money and mainly by Indian blood."
- **Phases of Colonial Capitalism:**
 - ✓ **Mercantile Capitalism (EIC Era):** Extraction through monopoly trade and taxation.
 - ✓ **Industrial Capitalism (19th Century):** India reduced to an exporter of raw cotton and importer of textiles.
 - ✓ **Finance Capitalism (Early 20th Century):** British private capital dominated infrastructure, plantations, and banking, reinforcing dependency.
- **Economic Consequences:** The structure produced **de-industrialisation, agrarian stagnation, excessive taxation**, and **recurring famines**, resulting in widespread impoverishment.

Intellectual Critiques of the Colonial Economy

- **R. C. Dutt – Industrial Destruction:** In the *Economic History of India* (1901–02), he demonstrated how colonial policies **deliberately destroyed indigenous industries** to protect British manufacturers.
- **M. G. Ranade – Economic Dependency:** Criticised colonial economic dependence and advocated **industrial regeneration** through Indian entrepreneurship.
- **R. Palme Dutt – Stages of Imperialism:** In *India To-day* (1940), identified **three stages of capitalist domination**, mercantile, industrial, and finance, highlighting the evolution of imperial control.
- **G. V. Joshi**, an Economist, aptly described railway expenditure as an "Indian subsidy to British industry."

Economic Reconstruction After Independence

- **Inherited Structural Weakness:** At independence in 1947, India faced an **agrarian, impoverished, and unequal economy** drained of capital and industrial base.
- **Ideological Synthesis:** Rejecting Cold War binaries, India adopted a **non-aligned mixed economy**, blending **socialist planning** with **capitalist pragmatism** to ensure self-reliance and equity.
- **Intellectual Precursors to Planning:**
 - ✓ **Visvesvaraya Plan (1934)** – advocated industrialisation and state coordination.
 - ✓ **National Planning Committee (1938)** – set the foundation for state-directed development.
 - ✓ **Bombay Plan (1944)** – proposed large-scale industrialisation with public–private cooperation.
 - ✓ **Gandhian and People's Plans (1944–45)** – emphasised decentralisation and rural self-sufficiency.
- **First and Second Five-Year Plans:**
 - ✓ **First Plan (1951–56):** Focused on **agriculture, irrigation, and rural reconstruction**.
 - ✓ **Second Plan (1956–61):** Based on **P. C. Mahalanobis model**, prioritising **heavy industries, capital goods, and import substitution**.

Planned Economy and Centralisation of Authority

- **Institutional Creation:** The **Planning Commission (1950)**, chaired by the Prime Minister, institutionalised **centralised planning and target allocation**.
- **Fiscal Centralisation:** The **Finance Commission (Article 280)**, though constitutionally mandated for fiscal transfers, became secondary to plan-based resource allocation.
- **Limited Federal Consultation:** The **National Development Council (1952)** was created to involve states but lacked independent financial powers.
- **Command Economy Features:** India's planning structure mirrored **Soviet-style central control**, aiming for rapid industrialisation, public sector expansion, and poverty eradication, yet it **consolidated central dominance** in economic governance.

Transition to Federal Economic Governance

- **Liberalisation Era (1991):** The **balance-of-payments crisis** triggered wide-ranging reforms, ending the **Licence-Permit-Quota Raj**, deregulating industries, reducing tariffs, and inviting foreign investment.
- **Market Orientation:** The 1991 reforms replaced the state-led model with **market-driven growth** and integration into the **global economy**.
- **Institutional Transformation:**
 - ✓ **Abolition of the Planning Commission (2014)** reflected a shift from central command to federal cooperation.
 - ✓ **Creation of NITI Aayog (2015)** introduced **cooperative and competitive federalism**, emphasising state innovation and evidence-based policymaking.
- **Fiscal Federal Tensions:** The **Goods and Services Tax (GST)** exemplify fiscal unity but has also **constrained state autonomy**, fuelling debates on **vertical imbalance and fiscal equity**.

India-US Trade Divergences

- **Tariff Dispute Dynamics:** The Trump tariff regime, justified on grounds of national security and domestic job protection, **contradicted WTO's comparative advantage principle**, undermining global free-trade norms.

- **India's Strategic Response:** Rooted in historical awareness, India's trade policy seeks to **balance self-reliance with pragmatic global engagement**, defending domestic interests while avoiding isolationism.
- **Philosophical Continuity:** Jaishankar's remark, "If trade becomes tariffs, where is competitiveness?", encapsulates India's enduring critique of externally imposed asymmetry, echoing nationalist economic thought since the colonial period.

Legacy of India's Economic Resistance

- **Continuum of Policy Evolution:** From **colonial subjugation** through **planned reconstruction** to **liberal federalism**, India's economic trajectory reflects a consistent **assertion of sovereignty and self-determination**.
- **Recurrent Themes:** The pursuit of **self-reliance, equitable growth, and resistance to external control** runs through every policy phase from Naoroji's drain theory to NITI Aayog's cooperative model.
- **Contemporary Relevance:** The present **India-US trade friction** is not merely a tactical disagreement but a **symbolic reaffirmation of India's historical resolve** to resist economic subordination and preserve strategic autonomy.

Way Forward

- **Strategic Engagement:** Pursue trade negotiations with the US grounded in reciprocity, not submission.
- **Institutional Resilience:** Strengthen WTO-aligned frameworks for dispute resolution to safeguard multilateralism.
- **Domestic Competitiveness:** Expand manufacturing and exports through PLI schemes and innovation-driven incentives.
- **Federal Balance:** Reinforce fiscal autonomy of states to sustain broad-based economic growth.
- **Economic Diplomacy:** Integrate trade with technology partnerships, digital cooperation, and sustainable supply chains to mitigate external shocks.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Que. With reference to India's historical resistance to economic domination, consider the following statements:

1. Dadabhai Naoroji's Drain Theory argued that colonial India financed Britain's prosperity through systematic transfer of wealth.
2. R. C. Dutt highlighted that de-industrialisation in India was an unintended consequence of free trade policies.
3. The phase of finance capitalism in colonial India saw British private capital dominating infrastructure and banking sectors.

Which of the statements given above is/are correct?

- (a) 1 and 3 only
- (b) 2 and 3 only
- (c) 1 and 2 only
- (d) 1, 2 and 3

Answer: (a)

Descriptive Question

Que. India's contemporary trade frictions with the United States reflect a historical continuum of resistance to externally imposed economic dominance. Discuss by tracing India's economic trajectory from colonial exploitation to post-liberalisation federal economic governance. (150 words, 10 marks)

INDIA ENERGY STACK (IES)

Why in News: The ambitious initiative aims to integrate producers, distributors and consumers into a connected data ecosystem for smarter energy management and consumer participation.

Key Details

- India's power sector is undergoing structural shifts:
 - ✓ Rapid expansion of **renewable energy**
 - ✓ Increasing role of **prosumers** (consumers who also produce energy) especially rooftop solar
 - ✓ Growth of **Electric Vehicles (EVs)**
 - ✓ Smart grid technologies like smart meters and SCADA systems
- However, the sector suffers from **fragmented legacy systems**, siloed data, and incompatible digital platforms making real-time coordination and innovation difficult.

Hence, policymakers envisage IES as the **digital backbone** to overcome these structural gaps.

Background

- The India Energy Stack (IES) is a central government initiative to build a **unified digital public infrastructure**

(**DPI**) for the electricity sector aiming to integrate producers, distributors, regulators, and consumers into an interoperable, data-driven ecosystem for smarter energy management.

- It is analogous to India's **Aadhaar** (identity) and **UPI** (digital payments) frameworks often described as an "UPI moment" for the power sector.

What is India Energy Stack?

- The India Energy Stack is a **modular, secure, interoperable DPI** for the power sector, designed to:
 - ✓ Provide **unique digital identifiers** for consumers, assets and transactions
 - ✓ Enable **real-time, consent-based data exchange**
 - ✓ Establish **open APIs** and standard protocols for seamless integration
 - ✓ Support applications related to grid management, market participation, analytics, and energy fintech
- It is being developed under the Ministry of Power, with **REC Limited** as the nodal agency and **FSR Global** as the knowledge partner.

Architecture & Key Components

According to government briefs and expert inputs:

- **Digital Registries:** Centralised registries storing standardised information on consumers, assets, grid elements and transactions addressing the problem of fragmented legacy data systems.
- **Open Protocols and APIs:** Open standards to ensure seamless interoperability across utilities, transmission systems, and consumer data platforms.
- **Utility Intelligence Platform (UIP):** A core application layer built on IES for analytics, real-time monitoring, forecasting, billing automation, and decision-support tools for utilities and regulators.

Expected Outcomes

IES is envisioned to revolutionise how India manages and interacts with its power ecosystem:

- **Enhanced Grid Efficiency:** Data integration and analytics will enable better load balancing, outage prediction, and demand forecasting.
- **Increased Consumer Participation:** Consumers can access real-time usage data, trade surplus energy (peer-to-peer), and choose greener or cost-efficient tariffs.

- **Renewable Integration:** Standardised data and real-time visibility will help integrate intermittent renewable sources more effectively into the grid.
- **Innovation & Market Growth:** Open APIs will spur energy fintech, analytics startups, and decentralised energy solutions, potentially transforming the sector into a dynamic digital marketplace.

Implementation Timeline

- A **task force** has been constituted to guide the development, pilot implementation, and national rollout.
- A **12-month Proof of Concept (PoC)** is planned with select utilities to test real-world use cases before nationwide scaling.
- Foundational strategy and architecture documents are under review and refinement by stakeholders.

Challenges & Consideration

- **Fragmented Legacy Systems:** Utilities use diverse proprietary systems, making standardisation and integration complex.
- **Data Privacy & Cyber Risks:** Large-scale data sharing raises concerns over protection and cybersecurity.
- **Capacity & Skills:** Utilities will require upskilling of workforce to leverage digital platforms effectively.
- **Regulatory Coordination:** Real-time data exchange requires alignment between central and state regulators and multiple stakeholders.
- **Comparative Analogy:** Just as **Aadhaar unified identity** and **UPI unified digital payments**, IES aims to unify and standardise the power sector's digital ecosystem potentially catalysing innovation, transparency and efficiency at scale.

Conclusion

The **India Energy Stack** represents a foundational reform in India's energy sector moving the country from fragmented legacy platforms to an integrated, data-driven digital backbone. IES is a cross-cutting policy initiative linking energy transition, digital governance, consumer empowerment, and sustainable infrastructure.

EXPECTED QUESTION FOR UPSC CSE

PRELIM MCQ

Que. The India Energy Stack (IES) is best described as:

- (a) A renewable energy financing mechanism managed by multilateral institutions

- (b) A digital public infrastructure integrating power producers, utilities and consumers through interoperable data systems
- (c) A regulatory framework to determine electricity tariffs at the national level
- (d) A centralised power generation programme focused on thermal energy expansion

Answer: (b)

GST 2.0 REFORMS: IMPLICATIONS FOR CONSUMPTION, FEDERALISM AND ECONOMIC GROWTH

Why in News: "GST 2.0" is in the news because the Indian government officially implemented a landmark restructuring of the indirect tax system, to boost consumption and ease compliance.

Key Features of GST 2.0

- **Slab Rationalisation**
 - ✓ Majority of goods and services placed under **5% or 18% GST**.
 - ✓ Over **375 items**, including groceries, medicines, agri-equipment, textiles, automobiles and electronics, witness rate reductions.
 - ✓ A **40% slab** retained for select sin and ultra-luxury goods.
- **Major Exemptions**
 - ✓ **Complete GST exemption on individual health and life insurance policies.**
 - ✓ Life-saving drugs and key educational materials brought under **nil or 5% GST**.
- **Removal of Anomalies**
 - ✓ Addressing **inverted duty structures** and **input tax credit (ITC) distortions**, particularly in sectors like coal and textiles.

Impact on Households and Consumption

- Government estimates suggest:
 - ✓ **13% reduction in grocery and daily essentials bills.**
 - ✓ Savings of up to **₹70,000 on small car purchases.**
 - ✓ **7-12% savings** on clothing, footwear, stationery and medicines.
 - ✓ **18% reduction in insurance premiums** due to GST exemption.

- According to the Finance Ministry, nearly **₹2 lakh crore will be left in the hands of consumers**, boosting **disposable income and consumption demand**, especially during the festive season.

Sector-wise Economic Implications

- **Agriculture and Rural Economy**
 - ✓ Lower GST on tractors, fertilizers and farm machinery (5% or nil) reduces input costs.
 - ✓ Expected to strengthen rural demand and farm mechanisation.
- **MSMEs and Manufacturing**
 - ✓ Simplified slabs and lower rates improve ease of compliance.
 - ✓ Enhanced competitiveness for domestic producers, aligning with **Make in India** and **Vocal for Local**.
- **Automobiles and Consumer Durables**
 - ✓ Rate cuts from 28% to 18% for small cars, two-wheelers, ACs and TVs stimulate aspirational consumption.
- **Healthcare and Insurance**
 - ✓ GST exemption on insurance is expected to increase insurance penetration and financial security.

Macroeconomic Significance

- The reforms are expected to:
 - ✓ Boost GDP growth by **up to 0.8%**, as indicated by government estimates.
 - ✓ Offset global headwinds, including trade uncertainties and tariff pressures.
 - ✓ Reinforce GST's original objective of being a **destination-based, consumption-friendly tax**.

Federalism and Revenue Concerns

- Several States have raised concerns regarding:
 - ✓ **Revenue losses due to rate cuts** (e.g., West Bengal, Telangana).
 - ✓ Demand for **extension of GST compensation** beyond the earlier assured period.
- The debate highlights ongoing challenges in **cooperative federalism**, especially balancing fiscal autonomy of States with national economic priorities.

Implementation Challenges

- **Passing Benefits to Consumers**
 - ✓ Weakening of the National Anti-Profitteering Authority (NAA) raises concerns about whether tax reductions will translate into lower retail prices.

- **Short-term Revenue Impact**
 - ✓ Foregone tax revenue may strain public finances in the short run.
- **Administrative Transition**
 - ✓ Businesses must adapt to reclassification of goods and revised compliance norms.

Conclusion

GST 2.0 represents a decisive shift towards a **simpler, growth-oriented and citizen-centric indirect tax regime**. While the reforms promise significant gains in consumption, affordability and ease of doing business, their long-term success will depend on **effective implementation, protection of States' fiscal interests, and strict monitoring to ensure benefits reach end consumers**. For India's journey towards **Viksit Bharat 2047**, GST 2.0 could act as a crucial macroeconomic lever if supported by cooperative federalism and institutional accountability.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. "GST 2.0" reforms recently implemented in India primarily aim to:

(a) Increase indirect tax collections by expanding higher GST slabs

(b) Simplify the GST structure to boost consumption and ease compliance

(c) Centralise indirect taxation by reducing the role of States

(d) Replace GST with a dual VAT system

Answer: (b)

NATIONAL CRITICAL MINERAL STOCKPILE (NCMS)

Why in News: India is set to launch the National Critical Mineral Stockpile (NCMS) to secure rare earth elements and reduce import dependence amid global supply disruptions triggered by China's export curbs.

What are Rare Earth Elements (REEs)?

- Rare earth elements comprise a group of **17 minerals**, including:
 - ✓ **15 lanthanides**, and
 - ✓ **Scandium and Yttrium**
- These elements possess **unique magnetic, luminescent and electrical properties**, making them indispensable for:

- ✓ Electric vehicles (EVs)
- ✓ Wind turbines
- ✓ Smartphones and semiconductors
- ✓ Defence and aerospace systems

Key Features

- **Definition:** NCMS is a **strategic reserve of critical minerals** maintained to safeguard a country's economic and national security interests.
- **Aim:** To **reduce import dependence** and ensure uninterrupted supply of rare earth elements in times of geopolitical or market disruptions.
- **Under: National Critical Minerals Mission (NCMM)**
 - ✓ **Initial Focus:** Creation of a **two-month buffer stock** of rare earth elements to counter supply shocks.
 - ✓ **Funding:** An allocation of **₹500 crore** under NCMM to establish and maintain the stockpile.
 - ✓ **Implementation Model:** Designed with **private sector participation** to ensure efficient procurement, storage and rotation of reserves.
 - ✓ **Future Expansion:** The scope of NCMS is expected to expand to **other critical minerals** such as lithium, cobalt and nickel over time.

Rationale Behind NCMS

- **Global Supply Chain Vulnerabilities**
 - ✓ China dominates the mining, processing and export of rare earths.
 - ✓ Export restrictions by China have highlighted India's exposure to external shocks.
- **Clean Energy Transition**
 - ✓ REEs are critical for India's targets on **renewable energy, electric mobility and decarbonisation**.
- **Strategic and National Security Needs**
 - ✓ Defence manufacturing and space technologies require uninterrupted access to rare earth-based components.

India's Existing Initiatives in Critical Minerals

- **Domestic Manufacturing Incentives**
 - ✓ Approval of a **₹7,300 crore incentive scheme** to promote **domestic rare earth magnet production**.
 - ✓ Target: **6,000 tonnes of magnets over five years**.
- **Critical Mineral Auctions**
 - ✓ **Five tranches** of auctions completed:
 - **55 critical mineral blocks offered**
 - **34 blocks successfully awarded**

- ✓ **Sixth tranche** recently launched to enhance domestic exploration.

Institutional Framework

- ✓ National Critical Minerals Mission aims to integrate **exploration, mining, processing and recycling**.

India's Resource Potential

- India holds approximately:
 - ✓ **7.23 million tonnes of rare earth oxide**
 - ✓ Embedded within **13.15 million tonnes of monazite deposits**
- Major deposits are found in:
 - ✓ Andhra Pradesh
 - ✓ Odisha
 - ✓ Tamil Nadu
 - ✓ Kerala
- Despite this resource base, **commercial extraction and processing remain limited**.

Key Challenges

- **Technological Constraints**
 - ✓ Lack of advanced processing and separation technologies for rare earths.
- **Import Dependence**
 - ✓ India continues to rely heavily on imports for processed rare earth materials.
- **Environmental Concerns**
 - ✓ Extraction from monazite involves radioactive by-products, requiring strict regulation.

Strategic Significance of NCMS

- Enhances **economic resilience** against global supply disruptions.
- Supports **Make in India, Atmanirbhar Bharat**, and **clean energy goals**.
- Strengthens India's position in **strategic minerals diplomacy**.
- Aligns with long-term vision of **Viksit Bharat 2047**.

Conclusion

The proposed **National Critical Mineral Stockpile** marks a crucial step in India's efforts to secure critical mineral supplies amid an increasingly uncertain global environment. While India possesses significant rare earth resources, addressing technological gaps and ensuring sustainable extraction remain key. If effectively implemented, NCMS can serve as a vital pillar in India's clean energy transition, industrial competitiveness and national security architecture.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Que. With reference to the National Critical Mineral Stockpile (NCMS), consider the following statements:

1. The NCMS aims to ensure uninterrupted availability of rare earth elements during geopolitical or market-related supply disruptions.
2. The NCMS is proposed under the National Critical Minerals Mission with an initial focus on creating a buffer stock of rare earth elements.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (c)

Descriptive Question

Que. Discuss the rationale behind the creation of the National Critical Mineral Stockpile (NCMS). How can it contribute to India's clean energy transition and strategic autonomy? (150 words) (10 marks)

EMPOWERING WOMEN IN AGRICULTURE: FROM INVISIBLE LABOUR TO ECONOMIC AGENCY

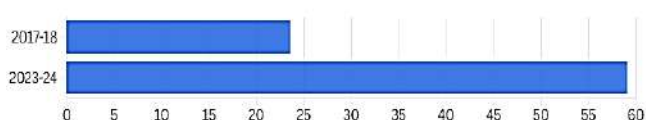
Why in News: According to the **Periodic Labour Force Survey (PLFS) 2023–24**, women's participation in agriculture has risen sharply. Yet, nearly **half of women engaged in agriculture are unpaid family workers**, underscoring persistent gender disparities in wages, land ownership, and institutional access.

Status of Women in Indian Agriculture

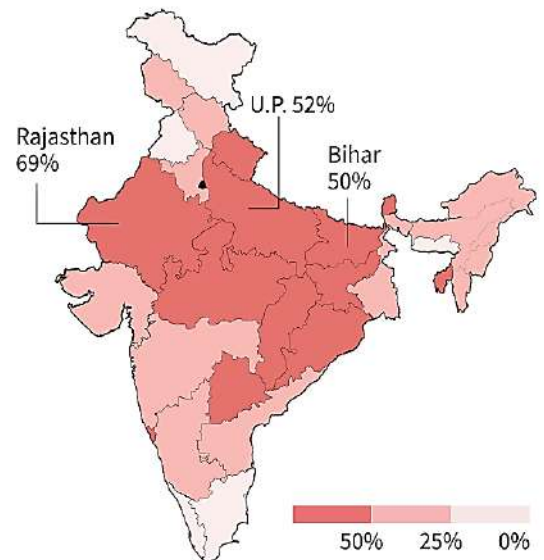
- **Feminisation of the Workforce:** Women now constitute **over 42% of India's agricultural workforce**, marking an increase of nearly **135% in the last decade**. Two out of every three working rural women are dependent on agriculture for their livelihoods. This shift reflects structural changes in the rural economy rather than a voluntary empowerment-driven transition.

The number of women in agriculture who are unpaid family workers

(in million)



- **Prevalence of Unpaid and Informal Work:** Despite higher participation, women's work remains largely invisible. Nearly **half of women agricultural workers are unpaid family labourers**, with their numbers increasing from **23.6 million in 2017–18 to about 59.1 million in 2024–25**. Consequently, **one in three working women in India today receives no direct remuneration**, exposing the limits of participation-led empowerment.
- **Regional Dimensions:** The concentration of women in agriculture is particularly acute in States such as **Bihar and Uttar Pradesh**, where more than **80% of working women** are engaged in farm activities. Over half of them remain unpaid, reinforcing intergenerational poverty and economic dependence.
- **Government Support Ecosystem:** Initiatives such as the **Mahila Kisan Sashaktikaran Pariyojana, Kisan Credit Cards, Self-Help Groups (SHGs)**, and women-centric **Farmer Producer Organisations (FPOs)** aim to improve women's access to skills, credit, and collective bargaining. However, their outreach and impact remain uneven due to structural barriers.



Factors Driving the Feminisation of Agriculture

- **Male Out-Migration:** Rural men are increasingly migrating to urban areas or shifting to better-paying non-farm jobs such as construction, transport, services, and government employment. This has left women to manage farms, often without commensurate authority or ownership.
- **Expansion of Contract and Commercial Farming:** Labour-intensive segments such as **floriculture, horticulture, and tea and coffee plantations** show a marked preference for women workers. While this

increases employment opportunities, it often perpetuates low wages and informality.

- **Patriarchal Norms and Social Expectations:** Women's farm labour is commonly perceived as an extension of household duties. Such norms devalue their contribution and deny them recognition as independent farmers.
- **Limited Non-Farm Alternatives:** Lower literacy, restricted mobility, and social conditioning constrain women's entry into non-farm employment, making agriculture the default and often only livelihood option.

Systemic Barriers to Women's Empowerment in Agriculture

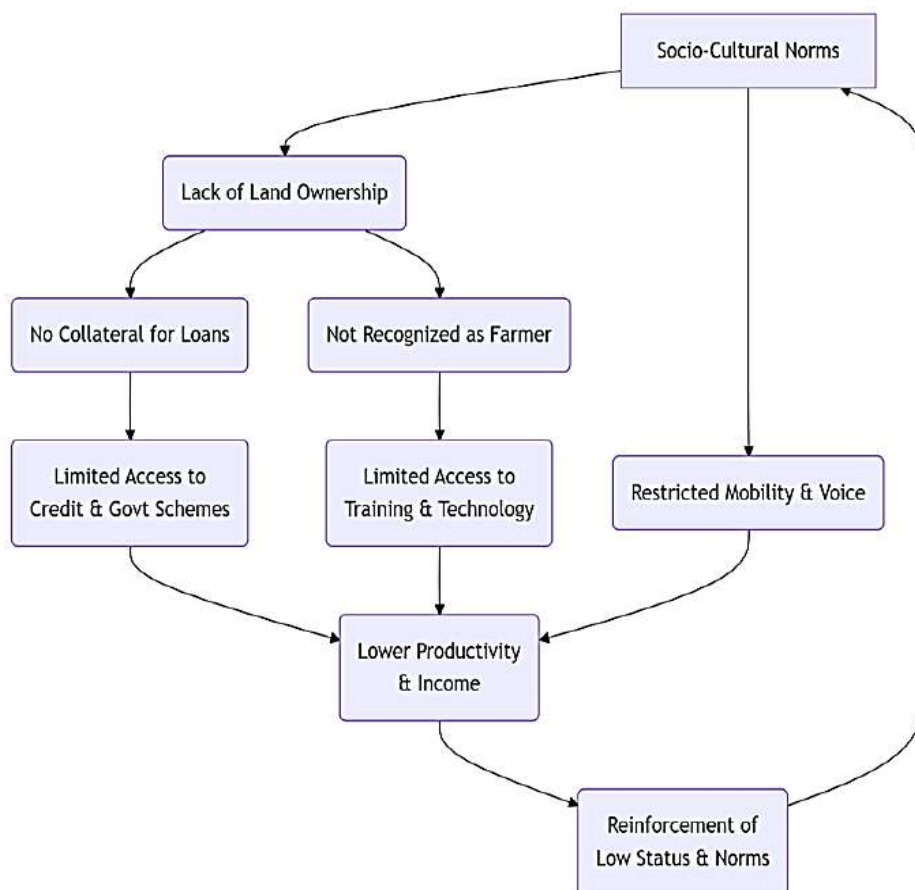
- **Mnemonic: WOMEN**

- ✓ **W – Wage Discrimination:** Women earn **20–30% less than men** for comparable agricultural work, undermining income security.
- ✓ **O – Omission from Decision-Making:** Agricultural extension systems, cooperatives, and Gram

Panchayats remain male-dominated, marginalising women's voices.

- ✓ **M – Machinery and Technology Mismatch:** Farm equipment is designed primarily for male users, limiting women's productivity and adoption of mechanisation.
- ✓ **E – Entrenched Double Burden:** Domestic responsibilities and care work impose time poverty, restricting women's participation in markets and training.
- ✓ **N – Negation of Land and Identity Rights:** Women own only **13–14% of landholdings**, curtailing access to credit, insurance, and government schemes.

- These barriers explain why increasing female participation has not translated into higher agricultural productivity or incomes. Notably, agriculture's share in India's Gross Value Added has declined, indicating distress-driven feminisation rather than transformative inclusion.



Global Trade, Technology, and New Opportunities

- **Leveraging Trade Integration**

- ✓ India's expanding trade engagements, including comprehensive **Free Trade Agreements (FTAs)**, offer new avenues for women's economic inclusion. Agreements such as the **India–UK FTA**, expected to boost agricultural exports by around **20%**, provide

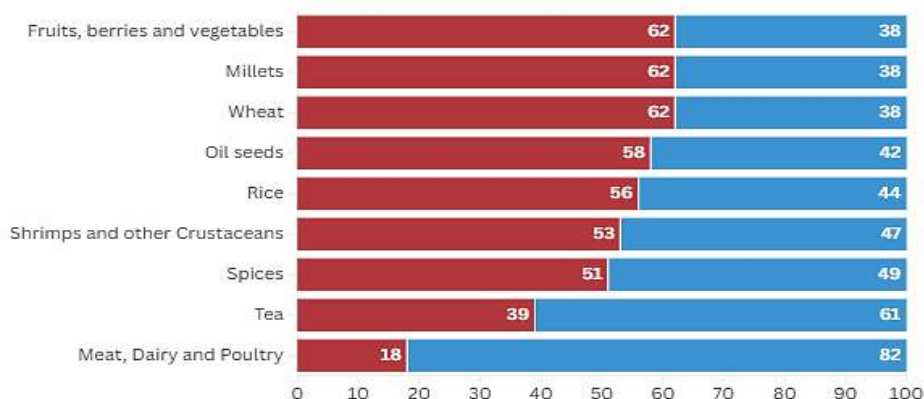
preferential access for products like rice, spices, dairy, tea, and processed foods value chains with high female participation.

- ✓ Targeted skilling, credit access, and market linkages can enable women to move from low-value farm labour to higher-margin activities such as processing, packaging, branding, and exporting, particularly in **organic and GI-tagged products**.

Proportion of men and women involved with crops with high export value

(in %)

Male Female



• Role of Digital Transformation

- ✓ Digital platforms have the potential to formalise women's agricultural work. Initiatives such as **e-NAM**, mobile-based advisory services, and voice-enabled applications improve price discovery, reduce intermediaries, and enhance access to financial services.
- ✓ Multilingual and voice-first solutions like **BHASHINI** and **Jugalbandi**, along with programmes such as **Digital Sakhi**, are especially relevant in addressing literacy and language barriers. However, low digital literacy, limited device access, and connectivity gaps continue to constrain adoption.

Best Practices and Emerging Models

- Several promising initiatives demonstrate pathways for women-centric agricultural transformation:
 - ✓ Women-led **FPOs** using digital tools for aggregation, branding, and direct market access.
 - ✓ State-supported programmes integrating technology, training, and collective enterprises.
 - ✓ Partnerships between government, private sector, and civil society to enhance digital and financial capabilities.
- Scaling such models can generate demonstration effects and accelerate women's integration into high-value agricultural markets.

Way Forward

• Mnemonic: GROW

- ✓ **G – Guarantee Market Access:** Align FTAs and export promotion with women-intensive sectors such as tea, spices, dairy, and millets.

- ✓ **R – Resource Rights and Reforms:** Promote joint and individual land ownership for women and systematically scale women-led SHGs and FPOs.
- ✓ **O – Open Digital Gateways:** Expand e-NAM, broadband access, and voice-first digital platforms tailored for women farmers.
- ✓ **W – Well-being and Social Support:** Provide crèche facilities, clean energy, water access, and social security to reduce time poverty.

Conclusion

The feminisation of Indian agriculture presents both a challenge and an opportunity. If left unaddressed, it risks entrenching unpaid labour and gender inequality. However, with targeted reforms in land rights, wages, technology access, and market integration, women can be transformed from invisible workers into empowered economic agents. Such a shift is indispensable for enhancing agricultural productivity, ensuring food security, and realising the broader vision of **women-led, inclusive, and sustainable development** a goal central to India's future growth trajectory.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Que. With reference to women in Indian agriculture, consider the following statements:

1. Women constitute more than 40% of India's agricultural workforce, yet nearly half of them work as unpaid family labour.
2. Lack of land ownership among women farmers restricts their access to institutional credit and government support schemes.
3. The feminisation of agriculture in India has coincided with a steady increase in agriculture's share in Gross Value Added (GVA).

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (a)

Descriptive Question

Que. "The increasing feminisation of Indian agriculture has not translated into commensurate economic empowerment of women." Critically examine the structural reasons behind this trend and suggest measures to transform women's participation in agriculture into inclusive and sustainable economic empowerment. (250 Words) (15 Marks)

INDIA'S RESISTANCE TO ECONOMIC DOMINATION

Why in News: India-US trade talks have stalled following steep tariff hikes by the U.S., reviving debate on India's historical resistance to economic domination and the need to protect national economic interests in a protectionist global order.

Key Details

- British colonial policies reduced India to a dependent economy through the drain of wealth, deindustrialisation, and exploitative trade practices.
- After independence, India adopted a mixed and planned economic model to rebuild agriculture, promote industrialisation, and achieve economic self-reliance.
- The early centralised "command economy" gradually evolved into a more federal framework with economic reforms and the establishment of NITI Aayog.
- India's contemporary trade and economic policies reflect historical lessons, balancing global integration with the protection of national economic interests.

Colonial Economic Exploitation and Drain of Wealth

- The colonial Indian economy was structured to serve the interests of the British Empire rather than domestic development. Dadabhai Naoroji's **Drain Theory** highlighted how wealth generated in India was systematically transferred to Britain without adequate economic returns.
- During the early mercantile phase, the East India Company extracted excessive revenues and used Indian

resources to finance exports to Britain. With the advent of industrial capitalism, India was reduced to a supplier of raw materials and a captive market for British manufactured goods. This process ensured Britain's industrialisation at the direct cost of India's economy.

- Colonial policies encouraged private British investment under monopolistic and unequal conditions, leading to:
 - ✓ Large-scale deindustrialisation of Indian handicrafts
 - ✓ Stagnation in agriculture
 - ✓ Heavy taxation and repeated famines
 - ✓ Widespread poverty and economic dependency
- Even infrastructure projects such as railways were designed primarily to facilitate British commercial interests, reinforcing India's dependent status rather than promoting indigenous industrial growth.

Intellectual Resistance to Colonial Economic Order

- Indian nationalist thinkers systematically exposed the exploitative nature of colonial economic policies. R.C. Dutt, in *The Economic History of India*, documented how British land revenue systems and trade policies impoverished Indian peasants. M.G. Ranade critiqued the dependent structure of the colonial economy, while R. Palme Dutt categorised imperial rule into phases of early capitalism, industrial capital, and finance capital.
- These critiques laid the intellectual foundation for post-independence economic planning and the rejection of laissez-faire colonial legacies.

Planned Economy in the Formative Years of Independence

- India achieved independence amidst the Cold War, when capitalism and socialism were competing global ideologies. Rather than aligning fully with either model, India adopted a pragmatic **mixed economy** framework tailored to its developmental needs.
- Economic planning in India preceded independence, as reflected in proposals such as the **Visvesvaraya Plan**, **Bombay Plan**, **Gandhian Plan**, and the **People's Plan**. The establishment of the **Planning Commission in 1950** institutionalised this approach through the Five-Year Plans.
- The **First Five-Year Plan** prioritised agricultural recovery, while the **Second Five-Year Plan**, guided by the Mahalanobis model, emphasised heavy industrialisation and capital goods. The objectives of planned development included poverty reduction, import

substitution, expansion of public sector enterprises, and self-reliance in critical industries.

Centralisation and the Command Economy

- The adoption of planning resulted in a highly centralised economic structure. Key economic decisions were concentrated at the Union level, justified by the urgent need to address nationwide challenges such as low investment, trade imbalances, and infrastructural deficits.
- The Planning Commission, chaired by the Prime Minister and composed largely of centrally appointed members, overshadowed constitutionally mandated institutions like the **Finance Commission**. Although the **National Development Council (1952)** provided a consultative forum for states, policymaking remained predominantly top-down.
- States functioned largely as implementing agencies responsible for resource mobilisation and execution of centrally designed programmes, with limited autonomy in policy formulation.

Economic Reforms and the Changing Role of States

- The centralised planning framework gradually evolved due to economic liberalisation, globalisation, and decentralisation. The abolition of the Planning Commission in 2014 marked the end of the era of centralised planning. Its replacement, **NITI Aayog**, was envisaged as a platform for **cooperative and competitive federalism**, ensuring greater participation of states in national policymaking.
- The new framework sought to move away from a one-size-fits-all model toward consensus-driven development strategies. However, reforms such as the introduction of the **Goods and Services Tax (GST)**, while improving market integration, have also constrained states' fiscal autonomy, leading to renewed debates on fiscal federalism.

Economic Sovereignty in a Protectionist World

- India's historical experience with colonial exploitation informs its cautious approach to modern trade negotiations. In an era marked by rising protectionism, weaponisation of tariffs, and geopolitical economic pressures, India's emphasis on safeguarding comparative

advantage, competitiveness, and policy autonomy reflects continuity rather than departure from its past.

- The balance between global integration and national interest remains a defining challenge for Indian economic diplomacy.

Conclusion

India's economic history reflects a continuous effort to resist external domination by rebuilding domestic capacity and preserving policy autonomy. From colonial exploitation to planned development and later reforms, India has adapted its strategies to changing global conditions while safeguarding national interests. This legacy continues to shape India's approach to contemporary economic and trade challenges.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to the National Critical Mineral Stockpile (NCMS), consider the following statements:

1. The NCMS aims to create a strategic reserve of rare earth elements to address supply disruptions arising from geopolitical or market uncertainties.
2. The NCMS is being implemented under the National Critical Minerals Mission with an initial focus on maintaining a buffer stock of critical minerals.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (c)

SUSTAINABLE FISHERIES AND MARKET DIVERSIFICATION

Why in News: India's fisheries sector is moving towards **Marine Stewardship Council (MSC)** eco-certification for several fish and shrimp varieties to diversify export markets and counter trade restrictions by aligning with global sustainability standards.

Understanding MSC Certification and Its Significance

- The Marine Stewardship Council certification is a globally recognised eco-label for wild-capture fisheries. It is based on the Food and Agriculture Organisation's (FAO) Code of Conduct for Responsible Fisheries and guidelines on eco-labelling.

- The certification evaluates fisheries on three core principles:
 - ✓ **Sustainable fish stocks**, ensuring that fishing levels do not lead to stock depletion.
 - ✓ **Minimised environmental impact**, protecting marine ecosystems and biodiversity.
 - ✓ **Effective fisheries management**, including monitoring, compliance, and adaptive governance.
- Globally, about 20% of fisheries are MSC-certified, and products carrying the label often enjoy greater consumer trust and preferential access in environmentally conscious markets.

India's Fisheries Sector: Trade Challenges and the Need for Diversification

- India's seafood exports have traditionally been concentrated in a few markets, particularly the United States. Recent tariff escalations and non-tariff barriers have highlighted the risks of such dependence. Affluent markets in Europe and Japan increasingly demand proof of sustainability, traceability, and ethical sourcing.
- MSC certification offers India a pathway to diversify export destinations, strengthen bargaining power in trade negotiations, and reduce vulnerability to unilateral trade restrictions.

Economic Gains from Eco-Labeling

- Experts estimate that MSC certification could increase revenues in the fisheries sector by nearly 30%. Certified seafood products often fetch significant price premiums in international markets.
- Key economic benefits include:
 - ✓ Higher export realisation for fishers and traders
 - ✓ Improved brand image of Indian seafood
 - ✓ Greater stability of incomes through assured demand
- By shifting from price-competitive exports to quality- and sustainability-driven markets, India can enhance the overall value of its seafood exports.

Fisheries Under Certification: Expanding Sustainability Net

- Several Indian fisheries are currently under advanced stages of assessment, including gillnet-caught blue swimming crab, trawl-caught shrimp varieties, squid, cuttlefish, octopus, and threadfin bream. Additional fisheries from regions such as Kanyakumari, Lakshadweep, Kerala, Odisha, and the Gulf of Mannar are also aiming for certification.

- The re-certification of Ashtamudi clam, India's first MSC-certified fishery, reflects a renewed commitment to maintaining ecological standards and long-term stock viability.

Role of Government and Institutions

- The Union government, through PMMSY, is subsidising the cost of third-party certification audits, lowering entry barriers for fishers and exporters. Institutional collaboration among the Marine Stewardship Council, Sustainable Seafood Network India (SSNI), and the Seafood Exporters Association of India (SEAI) is facilitating technical assessments, stock evaluations, and capacity building.
- Such public-private collaboration is essential to align economic incentives with sustainability goals.

Sustainability and Livelihood Security

- Beyond trade gains, eco-labelling promotes responsible fishing practices that ensure long-term availability of fish stocks. This is particularly important for small-scale fishers, whose livelihoods are directly dependent on healthy marine ecosystems.
- By embedding sustainability into fisheries management, MSC certification contributes to ecological balance, income stability, and intergenerational equity key components of sustainable development.

Challenges and Way Forward

- Despite its promise, the certification process faces several challenges:
 - ✓ High technical requirements such as scientific stock assessments
 - ✓ Limited awareness and capacity among small-scale fishers
 - ✓ Costs of compliance and monitoring
- To maximise benefits, India must:
 - ✓ Strengthen data collection and scientific fisheries management
 - ✓ Expand training and awareness programmes for fishing communities
 - ✓ Integrate certification goals with coastal livelihood schemes
 - ✓ Promote domestic demand for sustainably sourced seafood

Conclusion

India's pursuit of MSC certification reflects a strategic recalibration of its fisheries sector in response to changing global trade dynamics. By embracing eco-labelling and sustainability standards, India can transform external trade pressures into opportunities for market diversification, higher incomes, and ecological stewardship.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Que. With reference to the Marine Stewardship Council (MSC) certification, consider the following statements:

1. MSC certification is applicable only to aquaculture-based fisheries.
2. It is aligned with the FAO's Code of Conduct for Responsible Fisheries.
3. MSC-certified seafood products often enjoy better market access in environmentally conscious countries.

Which of the statements given above is/are correct?

- (a) 2 and 3 only
- (b) 1 and 3 only
- (c) 1 and 2 only
- (d) 1, 2 and 3

Answer: (a)

Descriptive Question

Que. How can eco-certification such as the Marine Stewardship Council (MSC) contribute to market diversification and sustainable livelihoods in India's fisheries sector? Discuss. (150 words) (10 marks)

PSYCHOLOGY BEHIND PRICE SURGES: UNDERSTANDING FOMOFLATION

Why in News: Recent global and domestic price spikes, such as sudden surges in airfares following policy announcements and panic buying during fuel or essential commodity shortages, have drawn attention to Fomoflation - where behavioural responses, rather than pure supply-demand fundamentals, drive inflationary pressures.

What is Fomoflation?

Fomoflation is a portmanteau of **Fear of Missing Out (FOMO)** and **inflation**. It refers to a situation where:

- Consumer anxiety about future scarcity or price hikes
- Media reports, social signalling, and herd behaviour
- Existing supply or logistical constraints

combine to create **rapid and self-reinforcing price increases**, even in essential goods and services. Unlike conventional inflation, which evolves gradually, Fomoflation is sudden, perception-driven, and often temporary but painful.

How Does Fomoflation Operate?

The process typically follows a cyclical pattern:

1. **Trigger Event:** A policy announcement, geopolitical event, or media report signals potential scarcity or cost escalation.
2. **Psychological Response:** Consumers fear missing out on lower prices or availability.
3. **Panic Buying and Hoarding:** Demand spikes sharply in a short period.
4. **Price Escalation:** Sellers respond to excess demand with higher prices.
5. **Feedback Loop:** Rising prices reinforce scarcity fears, sustaining the cycle.

This behavioural loop creates artificial demand, pushing prices beyond what supply conditions alone would warrant.

Illustrations of Fomoflation

- **Sudden Airfare Inflation:** Policy announcements affecting immigration or travel norms have triggered panic-driven bookings, leading to steep fare increases within days, despite unchanged aviation costs.
- **Fuel and Essential Commodities:** During economic crises or rumours of shortages, consumers often hoard fuel or staples such as pulses and edible oil. This behaviour intensifies shortages and accelerates price rise.
- **Festive Season Demand:** Media reports forecasting shortages before festivals often prompt excessive advance purchases, inflating prices even when supply chains are stable.

These examples underline that perceived scarcity can be as powerful as real scarcity.

Why Fomoflation is Different from Conventional Inflation

- **Behaviour-led** rather than policy-led
- **Short-term and volatile**, but severe
- **Amplified by social media and instant information flows**
- **Weak linkage with production costs or money supply**

This makes it difficult to address solely through monetary tightening or fiscal interventions.

Implications for the Economy and Governance

- **Consumer Welfare Loss:** Households bear higher costs, especially for essentials.
- **Market Distortions:** Artificial demand misguides price signals.
- **Policy Challenges:** Central banks may overtighten if behavioural inflation is misread as structural.
- **Trust Deficit:** Repeated price shocks erode confidence in markets and institutions.

How Can Consumers Protect Themselves?

Consumers can mitigate the impact of Fomoflation by:

- Assessing whether scarcity is real or perception-driven
- Avoiding panic purchases and last-minute decisions
- Planning ahead and maintaining limited buffers of essentials
- Comparing prices across platforms
- Distinguishing between hype-driven and fundamentals-driven price movements

Informed and patient consumer behaviour can weaken the feedback loop of artificial demand.

Role of Government and Institutions

- **Transparent Communication:** Timely clarification of policy decisions to reduce panic
- **Market Surveillance:** Monitoring hoarding, cartelisation, and unfair pricing
- **Consumer Awareness:** Public advisories to counter misinformation
- **Data-driven Regulation:** Differentiating between behavioural and structural inflation while framing responses

Effective governance can dampen the psychological triggers that fuel Fomoflation.

Conclusion

Fomoflation underscores the growing intersection between psychology and economics in an era of instant information and social amplification. While patience and informed decision-making can help consumers avoid inflated prices, structural safeguards and transparent governance are equally essential. Recognising and addressing Fomoflation is therefore crucial for ensuring price stability and protecting consumer welfare in modern economies.



ENVIRONMENT & GEOGRAPHY

LANDSLIDES IN DARJEELING

Why in News: Darjeeling and adjoining hill areas witnessed severe landslides in October 2025 following exceptionally heavy rainfall, leading to loss of lives, collapse of critical infrastructure such as bridges, and disruption of national and state highways. The disaster has once again highlighted the growing vulnerability of the Eastern Himalayas and its wider national security implications.

Background

- Darjeeling, popularly known as the “Queen of Hills”, is located in the Eastern Himalayan region, characterised by fragile geology, steep slopes and high rainfall. Historical records indicate repeated landslides in the region in **1899, 1934, 1950, 1968, 1975, 1980, 1991, 2011 and 2015**.
- According to the **State of Environment Report (1991)** by the Centre for Science and Environment, the Teesta Valley experienced multiple cloudburst events during the 20th century. The **Landslide Atlas of India 2023 (ISRO)** ranked Darjeeling among the most landslide-prone districts in the country, indicating chronic exposure rather than episodic risk.



Causes of Increasing Landslides in Darjeeling

- **Climate Change and Changing Rainfall Patterns**
 - ✓ Rainfall has shifted from prolonged moderate showers to **short-duration, high-intensity downpours**.
 - ✓ IMD categorises such events as “exceptionally heavy rainfall”, which overwhelms natural drainage systems.

- ✓ Climate change has intensified extreme weather events across the Himalayan belt.

- **Unsustainable Development**

- ✓ Construction of **hydropower projects, railways, hotels and urban infrastructure** has exceeded the ecological carrying capacity of the hills.
- ✓ Hill cutting, slope destabilisation and deforestation have increased landslide susceptibility.

- **Unplanned Urbanisation and Encroachments**

- ✓ Rapid population growth and migration have led to **unauthorised settlements on riverbeds, slopes and natural drainage channels (jhoras)**.
- ✓ Solid waste dumping blocks natural water flow, increasing slope failure.

- **Hydrological and River Course Changes**

- ✓ Rivers like the Teesta and Balason have altered their courses, intensifying erosion and flooding in downstream areas.
- ✓ Glacial melt and sediment load further aggravate instability.

- **Weak Institutional Capacity**

- ✓ Local bodies such as municipalities, panchayats and autonomous councils lack **technical expertise, funds and disaster preparedness mechanisms**.
- ✓ Absence of specialised hill-area disaster management institutions remains a critical gap.

Disaster as a Foretold Event

Several scientific and policy reports had warned about such disasters:

- The **Sikkim Human Development Report (2001)** cautioned about the risks of Glacial Lake Outburst Floods (GLOFs).
- The **Lhonak Lake GLOF (2023)** in Sikkim caused massive destruction, including the loss of the **Chungthang Hydropower Project**, military infrastructure and economic assets worth nearly **60% of Sikkim’s GDP**.

- Downstream impacts in Darjeeling and Jalpaiguri districts highlight the **transboundary and cascading nature of Himalayan disasters**.

National Security Implications

- **Strategic Location – Chicken’s Neck Corridor**
 - ✓ Darjeeling lies close to the **Siliguri Corridor**, India’s narrow land link to the North-East. Any disruption affects:
 - Military logistics
 - Border management
 - Connectivity with the North-Eastern states
- **Threat to Strategic Infrastructure**
 - ✓ Landslides damage roads, bridges, railways and communication lines crucial for troop movement and disaster response.
 - ✓ Military installations and supply routes become vulnerable during extreme events.
- **Economic and Soft Power Losses**
 - ✓ Darjeeling tea, tourism, education and biodiversity contribute to foreign exchange and India’s global image.
 - ✓ Recurrent disasters erode these long-term economic assets.
- **Regional Stability Concerns**
 - ✓ The Teesta river system impacts **India, Bhutan, Bangladesh and Nepal**, making disasters a regional security concern.
 - ✓ Poor management can strain diplomatic and water-sharing relations.

Way Forward

- **Integrated Himalayan Disaster Management Framework**
 - ✓ Establish specialised **regional institutions for climate change and disaster studies** in the Eastern Himalayas.
 - ✓ Strengthen early warning systems using satellite-based monitoring (ISRO).
- **Sustainable Development Regulation**
 - ✓ Enforce strict environmental impact assessments (EIAs) for hill infrastructure projects.
 - ✓ Promote eco-sensitive zoning and carrying capacity-based planning.

- **Institutional Capacity Building**
 - ✓ Equip local governments with trained manpower, technology and financial resources.
 - ✓ Strengthen the role of district administrations and State Disaster Response Forces (SDRFs).
- **Nature-Based Solutions**
 - ✓ Afforestation, slope stabilisation, watershed management and revival of natural drainage channels.
 - ✓ Scientific solid waste management to prevent blockage of jhoras.
- **National Security Integration**
 - ✓ Treat Darjeeling and surrounding regions as a **national interest zone** under India’s **Act East Policy**.
 - ✓ Align disaster resilience with defence preparedness and border infrastructure planning.

Conclusion

The recurring landslides in Darjeeling are not merely natural disasters but the outcome of **climate change, unsustainable development and institutional neglect**. Given its ecological fragility and strategic importance, Darjeeling’s future must be planned through a **national security and sustainability lens**. Proactive governance, scientific planning and regional cooperation are essential to safeguard both human lives and India’s long-term strategic interests.

EXPECTED QUESTION FOR UPSC CSE
<p>Prelims MCQ</p> <p>Que. With reference to landslides in the Darjeeling Himalayas, consider the following statements:</p> <ol style="list-style-type: none"> 1. Darjeeling lies in the Eastern Himalayan region characterised by fragile geology and steep slopes. 2. Short-duration, high-intensity rainfall events have increased due to climate change in the region. 3. The Landslide Atlas of India identifies Darjeeling as one of the least vulnerable districts. <p>Which of the statements given above are correct?</p> <p>(a) 1 and 2 only (b) 2 and 3 only (c) 1 and 3 only (d) 1, 2 and 3</p> <p style="text-align: right;">Answer: (a)</p>

Descriptive Question

Que. Climate change has altered the nature and intensity of disasters in the Himalayan region.” Discuss this statement in the context of recurring landslides in Darjeeling. (150 Words) (10 Marks)

INDIAN WOLF (CANIS LUPUS PALLIPES)

Why in News: The International Union for Conservation of Nature (IUCN) a global authority on species status has **for the first time evaluated the Indian wolf (Canis lupus pallipes) independently**, suggesting that it can be recognised as a **potential distinct species** within the Canis genus. This recent update carries significant implications for wildlife conservation, biodiversity policy and India’s ecological security.

Background and Taxonomy

- The Indian wolf is traditionally treated as a subspecies of the grey wolf (Canis lupus), commonly referred to as Canis lupus pallipes.
- Recent **genetic and evolutionary studies** suggest that the Indian wolf represents one of the **most ancient wolf lineages**, having diverged from other wolf species thousands of years ago on the Indian subcontinent.
- Based on these features, IUCN experts now consider it a **“potential distinct species” within the Canis genus**, which would elevate it to being the **eighth recognised species** in the genus if officially accepted.



Population and Conservation Status

- According to the **2025 IUCN Red List assessment**, the Indian wolf’s **global population is estimated at around 2,877–3,310 mature individuals**, mostly in India and a few in Pakistan.
- The species has been categorised as **“Vulnerable”** due to rapid population decline caused by habitat loss,

fragmentation, persecution, and anthropogenic pressures.

- Only **about 12.4% of its distribution falls within protected areas**, which indicates that the **majority of the population lives outside legally protected landscapes**, making formal conservation more complex.

Ecological and Evolutionary Significance

- The Indian wolf has **unique adaptations to semi-arid grasslands and scrublands**, unlike its northern counterparts that inhabit forests and mountains. Its slender build, light coat and heat tolerance are ecological specialisations for India’s dry ecosystems.
- As one of the **ancient wolf lineages**, its conservation is crucial for maintaining the **evolutionary diversity of the Canis genus**.

Key Threats

The species faces multiple threats:

- **Habitat Loss and Fragmentation**
 - ✓ Expansion of agriculture, infrastructure development and land-use change have reduced and fragmented grasslands and semi-arid landscapes — the wolf’s primary habitats.
- **Human-Wolf Conflict**
 - ✓ Wolves often prey on livestock due to dwindling wild prey, leading to retaliatory killings by local communities.
- **Lack of Protected Area Coverage**
 - ✓ With only a small fraction of its range under formal protection, conventional protected area-based strategies are inadequate for its conservation.
- **Genetic Threats and Hybridisation**
 - ✓ Emerging concerns include hybridisation with free-ranging dogs, which can dilute genetic integrity. Studies in regions like Gujarat have reported wolf-dog hybrid cases, posing additional conservation challenges.

Policy Dimensions and Conservation Imperatives

- **Scientific Classification and Conservation Policy**
 - ✓ Recognising the Indian wolf as a **distinct species** would **elevate its priority on global and national conservation agendas**. This can attract more

research funding, focused monitoring and bespoke strategies beyond generic “canid management”.

- **Grassland and Semi-arid Ecosystem Protection**
 - ✓ Much of the wolf’s habitat lies in **open natural ecosystems** grasslands and scrublands which are historically undervalued in India’s conservation framework. Reclassifying and protecting these land-scapes is critical.
- **Community-Centric Strategies**
 - ✓ Promoting **coexistence** through community awareness, compensation for livestock losses and participatory monitoring can reduce human–wolf conflict and support local stewardship.
- **National Legislation and Action Plans**
 - ✓ The Indian Wildlife (Protection) Act, 1972 already protects wolves at Schedule I level in many regions. However, implementation at landscape scales and integration into **National Biodiversity Action Plans** will enhance effectiveness.

Conclusion

The IUCN’s independent assessment of the Indian wolf as a potential distinct species marks a **milestone in biodiversity conservation**. It underscores the need for a **nuanced, landscape-level conservation strategy** that goes beyond traditional protected area approaches and reflects the unique ecological and evolutionary value of the species. Effective conservation will depend on **scientific recognition, policy support, habitat restoration and community engagement** — a multi-pronged approach aligned with India’s commitments under the Convention on Biological Diversity and national biodiversity goals.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to the Indian Wolf, consider the following statements:

1. The IUCN has recently assessed the Indian Wolf independently and suggested that it may be a potential distinct species.
2. The Indian Wolf is primarily adapted to cold alpine and forest ecosystems of the Himalayan region.
3. A majority of the Indian Wolf population occurs outside protected areas.

Which of the statements given above is/are correct?

- (a) 1 and 3 only
- (b) 1 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Answer: (a)

WTI REPORT ON INDIA’S FRONTLINE FOREST STAFF

Why in News: The Wildlife Trust of India (WTI) released a report at the IUCN World Conservation Congress 2025 highlighting the risks, sacrifices, and contributions of India’s frontline forest staff over the last 25 years.

Key Details

- The **Wildlife Trust of India (WTI)** released a report titled “Guardians of the Wild: Supporting India’s Frontline Forest Staff” during the **IUCN–WCPA International Ranger Award Ceremony** at the **IUCN World Conservation Congress, Abu Dhabi (October 2025)**.
- The report highlights the **critical role, risks, and sacrifices of India’s frontline forest personnel (Van Rakshaks)** over the last 25 years.

Background

- India possesses one of the richest biodiversities in the world and manages **over 1,100 protected areas**, including National Parks, Wildlife Sanctuaries, Conservation Reserves, and community forests. The **frontline forest staff**, commonly referred to as **Van Rakshaks**, act as the first line of defence against wildlife crime, habitat degradation, and human–wildlife conflict.
- Despite their central role in conservation, forest personnel often operate under **challenging and life-threatening conditions**, with limited institutional support and recognition.

Key Highlights of the Report

- **Human Cost of Conservation**
 - ✓ The report documents **540 forest personnel** who were **killed or seriously injured** while performing their duties.
 - ✓ Nearly **74% of the documented cases involved fatalities**, underscoring the extreme risks faced by frontline staff.

- ✓ Personal narratives included in the report provide ground-level insights into conservation challenges.

- **Van Rakshak Project (VRP)**

- ✓ Launched in **2000** by WTI with support from the **International Fund for Animal Welfare (IFAW)**.
- ✓ Objective: To build a **trained, motivated, and well-equipped frontline forest force**.
- ✓ Impact:
 - **Over 21,000 forest personnel** supported across India.
 - Capacity-building through training in:
 - Wildlife crime prevention
 - Human-wildlife conflict mitigation
 - Wildlife rescue techniques
 - Provision of **essential field gear** for **safety** and patrolling.

- **Supplementary Accident Assurance Scheme**

- ✓ Provides **immediate financial assistance** to permanent, temporary, and daily wage forest workers injured or killed on duty.
- ✓ Since **2001**, **367 personnel or families** have received support.
- ✓ During the **COVID-19 pandemic**, assistance was extended to **173 families** under the Conservation Heroes COVID Casualty Fund.

Institutional and Global Support

- The report was released in the presence of representatives from:
 - ✓ **Ministry of Environment, Forest and Climate Change (MoEFCC)**
 - ✓ **International Union for Conservation of Nature (IUCN)**
 - ✓ **World Commission on Protected Areas (WCPA)**
 - ✓ **International Fund for Animal Welfare (IFAW)**
 - ✓ This reflects growing **international recognition of India's conservation workforce**.

Significance for India

1. Biodiversity Conservation

- Frontline forest staff are central to achieving goals under:
 - ✓ **Wildlife Protection Act, 1972**
 - ✓ **National Biodiversity Action Plan**

- ✓ **India's commitments under the Convention on Biological Diversity (CBD)**

2. Internal Security and Environmental Governance

- Forest personnel play a key role in:
 - ✓ Combating wildlife trafficking
 - ✓ Preventing forest encroachment
 - ✓ Managing eco-sensitive and border forest regions

3. Sustainable Development

- Their work directly contributes to:
 - ✓ **Climate change mitigation**
 - ✓ **Ecosystem services**
 - ✓ **Livelihood security for forest-dependent communities**

Challenges Highlighted

- High occupational risk with inadequate insurance coverage
- Shortage of modern equipment and infrastructure
- Psychological stress and lack of formal recognition
- Involvement of contractual and daily wage workers without social security

Way Forward

- **Institutionalised Insurance & Welfare Measures**
 - ✓ Nationwide accident and life insurance for all categories of forest staff.
- **Capacity Building & Modernisation**
 - ✓ Regular training in technology-driven surveillance, forensic wildlife investigation, and conflict mitigation.
- **Formal Recognition & Career Progression**
 - ✓ National awards, service benefits, and mental health support systems.
- **Community-Forest Staff Partnership**
 - ✓ Strengthening joint forest management to reduce conflict and workload.
- **Policy Integration**
 - ✓ Integrating frontline forest staff welfare into national climate and biodiversity policies.

Conclusion

The WTI report reaffirms that **effective wildlife conservation begins on the ground**. India's frontline forest staff are not merely enforcers of environmental laws but are **custodians of the nation's natural heritage**. Strengthening

their safety, dignity, and institutional support is essential for achieving long-term conservation and sustainable development goals.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. The Van Rakshak Project (VRP), often mentioned in the context of forest conservation in India, aims primarily to:

- (a) Create new protected areas across India
- (b) Strengthen frontline forest staff through training, equipment, and welfare support
- (c) Promote eco-tourism in forest regions
- (d) Digitise forest land records

Answer: (b)

AURORA LIGHTS IN INDIA

Why in News: Recently, intense solar activity led to vivid displays of the **Northern Lights (Aurora Borealis)** across high-latitude regions, drawing scientific and public attention to Sun–Earth interactions and space weather phenomena.

What are the Northern Lights?

- The **Northern Lights**, scientifically known as **Aurora Borealis**, are natural luminous phenomena observed mainly in the **high-latitude regions of the Northern Hemisphere**. Similar light displays in the Southern Hemisphere are called **Aurora Australis**.
- They appear as **colourful, moving curtains or arcs of light**, commonly green, red, purple, and blue, dancing across the night sky.

How are Auroras Formed?

- **Origin at the Sun**
 - ✓ The Sun continuously emits a stream of charged particles, known as the **solar wind**.

- ✓ During **solar storms** or **coronal mass ejections (CMEs)**, the intensity of this particle flow increases significantly.

- **Role of Earth's Magnetic Field**

- ✓ Earth is protected by its **magnetosphere**, which deflects most solar particles.
- ✓ Some charged particles get **trapped near the geomagnetic poles**, where the magnetic field lines converge.

- **Interaction in the Upper Atmosphere**

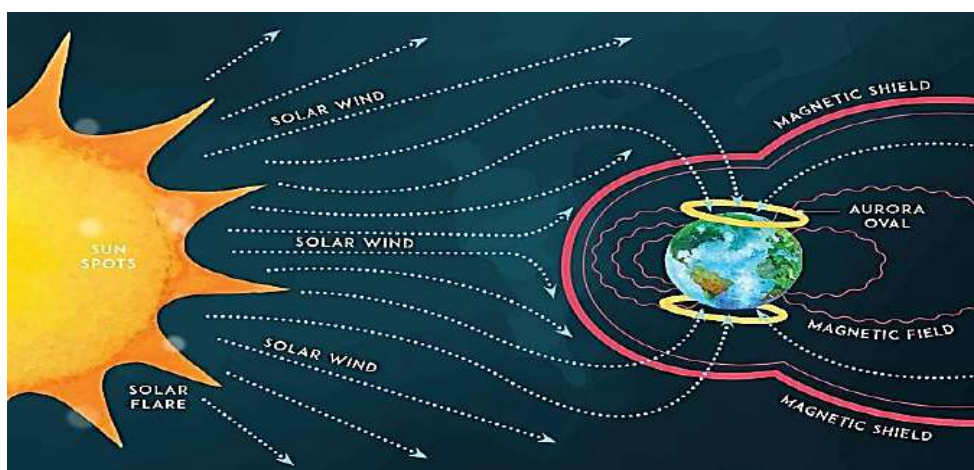
- ✓ These particles enter the **ionosphere** (about **90–1,000 km above Earth's surface**).
- ✓ They collide with atmospheric gases such as **oxygen and nitrogen**.
- ✓ These collisions release energy in the form of **visible light**, producing auroras.

Why are Auroras Seen Mostly Near the Poles?

- Earth's magnetic field is strongest and most open at the **polar regions**.
- Charged particles are guided along magnetic field lines toward the poles.
- Hence, auroras occur predominantly in **auroral ovals** around the **geomagnetic North and South Poles**.

Solar Processes Involved

- **Solar Wind:** The Sun constantly emits a stream of charged particles known as solar wind.
- **Earth's Magnetosphere:** Earth's magnetic field extends into space and forms the magnetosphere, which acts as a shield against solar wind.
- **Interaction with Magnetosphere:** Solar wind particles interact with Earth's magnetosphere, particularly near the poles where the magnetic field lines converge.



Colours of the Aurora and Their Causes

When and Where are Auroras Most Visible?

Gas Involved	Altitude	Colour Produced
Oxygen	Above ~200 km	Red
Oxygen	Below ~200 km	Green (most common)
Nitrogen	Lower altitudes	Blue and Purple
Hydrogen/Helium (rare)	Variable	Pink and Violet

- **Best Time:** Winter months (longer and darker nights)
- **Peak Activity:** During strong solar storms and around equinoxes
- **Major Locations:**
 - ✓ Norway, Sweden, Finland
 - ✓ Iceland and Greenland
 - ✓ Canada and Alaska
 - ✓ Parts of Russia and Antarctica (for Aurora Australis)

Magnetic Storms and Space Weather

- Periodic increases in solar wind intensity cause **geomagnetic storms**.
- These storms can:
 - ✓ Intensify auroral displays
 - ✓ Disrupt satellite communication
 - ✓ Affect GPS systems and power grids

Importance of Auroras

- **Scientific Significance:** Help study **Sun–Earth interactions** and space weather
- **Technological Relevance:** Improve preparedness against solar-induced disruptions
- **Cultural and Tourism Value:** Integral to indigenous folklore and polar tourism
- **Environmental Indicator:** Reflect solar and geomagnetic activity cycles

Prelims Special:

- Aurora Borealis → Northern Hemisphere
- Aurora Australis → Southern Hemisphere
- Occur in the **ionosphere**
- Caused by interaction of **solar wind** with **Earth's magnetic field**
- Most common colour: **Green (oxygen)**

Conclusion

The Northern Lights are not merely a visual spectacle but a vivid demonstration of the **dynamic relationship between the Sun and Earth**. They highlight the role of Earth's magnetic shield in sustaining life while offering crucial insights into space weather phenomena making auroras a subject of both scientific importance and natural wonder.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. Auroras are mostly observed near the Earth's polar regions because:

- Atmospheric density is lowest near the poles
- Earth's rotation is slowest near the poles
- Magnetic field lines converge near the poles
- Solar radiation is strongest at the poles

Answer: (c)

UN-BACKED NET-ZERO BANKING ALLIANCE (NZBA) CEASES OPERATIONS

Why in News: The **Net-Zero Banking Alliance (NZBA)**, an **UN-backed global climate finance initiative**, announced the **immediate cessation of its operations in October 2025**, amid declining political and institutional support for climate commitments, particularly in the **United States and Europe**.

About the Net-Zero Banking Alliance (NZBA)

- **Launched:** 2021
- **Institutional Framework:**
 - ✓ Operated under the **UN Environment Programme – Finance Initiative (UNEP-FI)**
- **Core Objective:**
 - ✓ Align banking sector lending and investment portfolios with **net-zero greenhouse gas emissions by 2050**
- **Key Focus Areas:**
 - ✓ Reducing the **carbon footprint of loans and investments**
 - ✓ Mobilising private finance for **low-carbon and climate-resilient development**
- **Membership:**
 - ✓ Nearly **150 global banks at its peak**, including major US, European, Canadian, and Japanese banks

Reasons Behind the Shutdown

- **Political Backlash Against Climate Finance**
 - ✓ The re-election of **Donald Trump in the United States** and renewed emphasis on **fossil fuel expansion** (“drill, baby, drill”) weakened political support for climate-linked financial commitments.
 - ✓ Climate action increasingly portrayed as **economically restrictive** rather than growth-enabling.
- **Withdrawal of Major Global Banks**
 - ✓ Several leading banks exited the alliance, including:
 - **JPMorgan Chase**
 - **Goldman Sachs**
 - **Bank of America**
 - **Barclays (UK)**
 - ✓ Banks cited **regulatory uncertainty**, legal risks, and lack of consensus on climate accountability.
- **Dilution of Climate Commitments**
 - ✓ NZBA softened its framework:
 - “Mandatory guidelines” were rephrased as **voluntary guidance**
 - Binding requirements became **non-enforceable recommendations**
 - This diluted credibility and reduced collective accountability.
- **Loss of Institutional Viability**
 - ✓ With the exit of major global banks, the alliance **no longer had sufficient membership** to function as a collective platform.

Current Status

- **NZBA has ceased operations with immediate effect.**
- However, its technical document “**Guidance for Climate Target Setting for Banks**” will remain available.
- Individual banks may still voluntarily use these frameworks for:
 - ✓ Emissions measurement
 - ✓ Portfolio decarbonisation
 - ✓ Transition planning

Significance of the Development

For Global Climate Governance

- Highlights the **fragility of voluntary, non-binding climate alliances.**

- Shows growing tension between **climate commitments and short-term economic interests.**
- Undermines global momentum toward achieving the **Paris Agreement goals.**

For Climate Finance

- Demonstrates the limits of **self-regulation by private financial institutions.**
- Raises questions about the effectiveness of **ESG-based voluntary initiatives** without legal backing.

For Sustainable Development

- Reduced collective action may slow:
 - ✓ Clean energy investments
 - ✓ Climate-resilient infrastructure financing
- Disproportionately affects **developing countries**, which rely on global capital flows.

Implications for India

- India requires **large-scale climate finance** to achieve:
 - ✓ **Net-zero by 2070**
 - ✓ Nationally Determined Contributions (NDCs)
- The collapse of NZBA reinforces India’s long-standing position that:
 - ✓ Climate finance must be **predictable, affordable, and backed by developed countries**
 - ✓ Over-reliance on voluntary private finance is insufficient
- Strengthens the case for:
 - ✓ **Multilateral development banks (MDBs) reform**
 - ✓ **Public climate finance and concessional funding**

Way Forward

- **Stronger Regulatory Frameworks**
 - ✓ Climate risk disclosure and transition planning must move from **voluntary to regulatory domains.**
- **Reforming Multilateral Institutions**
 - ✓ MDBs and international financial institutions must play a **greater leadership role.**
- **Balanced Climate Transition**
 - ✓ Climate action must integrate:
 - Developmental needs
 - Energy security
 - Equity and common but differentiated responsibilities (CBDR)

- **South-Led Climate Finance Models**
 - ✓ Emerging economies like India should promote **alternative, inclusive climate finance platforms**.

Conclusion

The shutdown of the **Net-Zero Banking Alliance** marks a **setback for global climate finance cooperation**, exposing the limitations of voluntary commitments in the absence of political will and regulatory backing. For countries like India, the episode reinforces the urgency of **institutional, equitable, and legally supported climate finance mechanisms** to ensure a just and effective global energy transition.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

The Net-Zero Banking Alliance (NZBA), which recently ceased operations, was launched under the aegis of which one of the following?

- United Nations Development Programme (UNDP)
- United Nations Environment Programme – Finance Initiative (UNEP-FI)
- World Bank Group
- International Monetary Fund

Answer: (b)

SUNDARBANS AQUACULTURE MODEL

Why in News: A **Sustainable Aquaculture in Mangrove Ecosystems (SAIME)** model developed by the **Nature Environment and Wildlife Society (NEWS)** in the **Indian Sundarbans (West Bengal)** has received **Global Technical Recognition** from the **Food and Agriculture Organization (FAO)** of the United Nations. The recognition was conferred during **FAO's 80th Anniversary Celebrations and the World Food Forum 2025** held in **Rome, Italy**.

Background

- The **Sundarbans**, a UNESCO World Heritage Site, constitute the **largest contiguous mangrove forest in the world** and form a critical ecological buffer against cyclones, storm surges, and sea-level rise.
- However, the region faces increasing pressure from **intensive shrimp monoculture**, land-use change, salinity intrusion, and climate change, threatening both **ecosystem stability** and **livelihood security**.

- In this context, FAO-recognised **ecosystem-based aquaculture models** gain significance as they align food production with environmental conservation.

About the SAIME Model

- **SAIME (Sustainable Aquaculture in Mangrove Ecosystems)** is a **climate-adaptive and conservation-linked livelihood model** that integrates aquaculture with mangrove preservation.
- **Key Features**
 - ✓ **Mangrove-linked aquaculture** with **5%–30% mangrove cover** retained within fish ponds
 - ✓ Adoption of **ecosystem-based and chemical-free shrimp farming**
 - ✓ Use of **mangrove leaf litter as natural feed**, reducing dependence on commercial inputs
 - ✓ Focus on **Black Tiger Shrimp (Penaeus monodon)**, a native species
 - ✓ **Community participatory approach** involving local fish farmers
 - ✓ Implementation across **29.84 hectares** by **42 farmers** in:
 - Chaital (North 24 Parganas)
 - Madhabpur (South 24 Parganas)

Outcomes and Impact

- **Livelihood Benefits**
 - ✓ **Over 100% increase in annual average net income** of farmers
 - ✓ Significant **reduction in production costs** due to low external inputs
 - ✓ Improved **income stability** in climate-vulnerable coastal zones
- **Environmental Benefits**
 - ✓ **Mangrove conservation** alongside livelihood generation
 - ✓ Enhanced **carbon sequestration** and contribution to climate mitigation
 - ✓ Improved **coastal resilience** against cyclones and sea-level rise
 - ✓ Prevention of **land degradation and biodiversity loss**

Sundarbans

Geographical Distribution

- The Sundarbans represent the **largest contiguous mangrove forest system in the world**, located in the **delta of the Ganga, Brahmaputra, and Meghna rivers** along the **Bay of Bengal**.
- This unique ecosystem lies at the **interface of land and sea** and comprises a dynamic mosaic of low-lying islands that are continuously reshaped by **tidal action, sediment deposition, and riverine processes**.
- The region spans **India and Bangladesh** and falls within the **tropical and subtropical climatic zones**.

Biological Landscape

- **Flora**
 - ✓ The mangrove vegetation of the Sundarbans is dominated by species such as:
 - *Heritiera fomes* (Sundari)
 - *Excoecaria agallocha* (Gewa)
 - *Ceriops decandra* (Goran)
 - *Sonneratia apetala* (Keora)
 - ✓ Rising **salinity levels**, driven by reduced freshwater inflow and sea-level rise, are gradually replacing tall mangrove species with **dwarf and salt-tolerant varieties**, leading to structural changes in forest composition.
- **Fauna**
 - ✓ The Sundarbans support rich faunal diversity, including:
 - Royal Bengal Tiger
 - Gangetic and Irrawaddy Dolphins
 - Estuarine Crocodile
 - Olive Ridley Turtle
 - ✓ This biodiversity reflects the high ecological productivity of the mangrove–estuarine system.

Ecological Role

- The Sundarbans serve as **nursery and breeding grounds** for fish, crabs, and shrimp, supporting marine and coastal food chains.
- Mangrove forests act as **natural coastal buffers**, reducing the impact of cyclones, storm surges, and tidal flooding.
- They function as efficient **carbon sinks**, contributing to climate change mitigation through long-term carbon storage.

Socio-Economic Landscape

- **Livelihoods:** The Sundarbans sustain the livelihoods of **over 12 million people**, including approximately **4.5 million in India** and **7.5 million in Bangladesh**, who depend on fishing, honey collection, forest produce, and small-scale agriculture.
- **Cultural Harmony:** Local communities maintain a close cultural relationship with the ecosystem. Traditional beliefs, folklore, and rituals emphasize **respect for nature and coexistence with wildlife**.
- The worship of **Bonbibi**, the forest deity, symbolises harmony between humans and the natural environment, particularly in the context of human–tiger interactions.

Protection and Conservation Status

- The Sundarbans were designated as a **UNESCO World Heritage Site** in **1987 (India)** and **1997 (Bangladesh)**.
- The Sundarban Wetland (India) was declared a Wetland of International Importance under the Ramsar Convention in 2019.
- An **India–Bangladesh Memorandum of Understanding (2011)** promotes joint conservation, scientific research, and coordinated monitoring of the shared ecosystem.

The **Sundarbans Biosphere Reserve** encompasses several protected areas, including:

- **Sundarbans National Park (India)**
- **Sundarban Wildlife Sanctuaries (Bangladesh)**
- **Sundarbans Reserve Forest (Bangladesh)**

Significance of Mangroves

- **Carbon Sequestration:** Mangroves are among the most effective **blue carbon ecosystems**, storing large quantities of carbon per hectare. The **saline and oxygen-deficient soils** slow down organic matter decomposition, enabling long-term carbon storage.
- **Coastal Protection:** Mangrove forests act as natural shields against **cyclones, tsunamis, coastal erosion, and flooding**. Studies indicate that they can reduce **wave energy by 5–35%** and **flood depths by up to 70%**, thereby protecting coastal settlements.

- **Biodiversity Conservation:** Mangrove ecosystems are **biodiversity hotspots**, hosting thousands of plant and animal species. In India alone, mangroves support **over 5,700 species**, contributing to ecological stability and resilience.

- **Livelihood Support:** Mangroves underpin **global fisheries**, provide breeding grounds for marine organisms, and supply forest products such as **honey, fruits, and leaves**, sustaining the livelihoods of millions of coastal and forest-dependent communities.

Mangroves provide a variety of benefits including:

1 Biodiversity Hotspots

Mangroves are home to an incredible array of species, providing habitat for fish, sharks, rays, sea turtles, and birds. An estimated 80% of the global fish catch relies on mangrove forests either directly or indirectly

2 Livelihoods

The fisher communities we work with depend on their natural environment to provide for their families. **Healthy mangrove ecosystems mean healthy fisheries**

3 Water Filtration

Mangroves are vital to maintain seawater quality. They retain flowing sediments, and can trap pollutants, protecting connected habitats such as coral reefs and seagrass beds.

4 Landmass builders

The dense network of roots and surrounding vegetation which trap sediment prevents erosion and can buildup coastlines and cayes over time.

5 Fighting climate change

Mangroves extract carbon from the atmosphere at a higher rate than tropical forests, and can store up to **5 times** more carbon per acre in their soils.

6 Economy

Many coastal communities rely on mangroves for their economic benefits, especially in the fisheries and tourism sectors. Mangroves also reduce costly damages from hurricanes by providing protection against wave action and storm surges.

What are the Major Threats and Conservation Strategies for India's Mangrove Ecosystem?

Aspect	Threat	Conservation Strategy
Land Conversion	Large-scale clearing of mangroves for aquaculture, oil palm, and rice cultivation has led to significant loss of mangrove cover.	Enforce stricter coastal zoning and land-use regulations . Integrate mangrove buffers in coastal development plans.
Timber Extraction & Charcoal Production	Unsustainable logging and wood harvesting degrade mangrove ecosystems, reducing biodiversity and carbon sequestration capacity.	Promote alternative livelihoods for local communities. Strengthen enforcement under the Forest Conservation Act, 1980 .
Pollution	Oil spills , industrial effluents, and plastic waste hinder mangrove regeneration and soil quality.	Implement phytoremediation and cleanup drives . Impose strict liability for oil and chemical spills.
Invasive Species	Species like Prosopis juliflora outcompete native flora , alter soil salinity, and obstruct mangrove regeneration.	Use bio-restoration methods and native species replantation for protecting the native species.
Climate Change & Sea-Level Rise	Increased salinity, coastal erosion, and submergence threaten mangrove habitats.	Strengthen Blue Carbon Initiative participation. Build climate-resilient mangrove belts.

Conclusion

The SAIME model shows how mangrove conservation and aquaculture can coexist, boosting livelihoods and climate resilience. It **reduces carbon emissions while protecting coastal ecosystems** and promoting sustainable and inclusive growth.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Que. "Sustainable aquaculture can act as a bridge between environmental conservation and livelihood security." In the light of the FAO-recognised SAIME model from the Sundarbans, critically examine the role of ecosystem-based aquaculture in addressing climate change and coastal livelihoods. (250 Words) (15 Marks)

GOMTI REJUVENATION MISSION

Why in News: The Uttar Pradesh government has launched the **Gomti Rejuvenation Mission** to restore the river Gomti to its "clean, uninterrupted, and pristine" form. The mission aims to **intercept 95% of urban sewage** entering the river and will cover the **entire river basin from Pilibhit to Ghazipur**.

About the Gomti River

- The **Gomti** is a **groundwater-fed perennial river** and an important **tributary of the Ganga** and its **length is around 960km**.
- It originates near **Madhotanda in Pilibhit district** and flows through major urban centres such as **Lucknow, Sultanpur, and Jaunpur** before joining the Ganga near **Ghazipur**.
- The river holds **ecological, cultural, and socio-economic significance**, especially for urban water supply, biodiversity, and religious practices.

Need for Rejuvenation

Over the years, the Gomti has faced severe degradation due to:

- Discharge of **untreated and partially treated urban sewage**
- **Encroachments** narrowing the river channel
- Loss of **wetlands and floodplains**
- Decline in **aquatic biodiversity** and water quality

Studies have indicated high **Biochemical Oxygen Demand (BOD)** and low **Dissolved Oxygen (DO)** levels, especially in urban stretches like Lucknow.

Key Features of the Gomti Rejuvenation Mission

- **Basin-level Approach**
 - ✓ The mission adopts an **integrated river basin management approach**, covering the entire Gomti basin rather than isolated urban stretches.
 - ✓ Focus is on **source-to-sink planning**, aligning with global best practices in river restoration.
- **Sewage Management and Pollution Control**
 - ✓ Identification of **39 major drains**, of which **13 were previously untreated**.
 - ✓ Target to **ensure zero discharge of untreated sewage** into the river.
 - ✓ **Six existing Sewage Treatment Plants (STPs)** with a combined capacity of **605 MLD** will be upgraded.
 - ✓ Construction of **new STPs** and diversion of drains to treatment facilities.
- **Ecological Restoration**
 - ✓ Development and revival of **wetlands**, including **Ekana Wetland** and **Sajan Lake** in Lucknow.
 - ✓ Wetlands will act as **natural bio-filters**, improve groundwater recharge, and enhance biodiversity.
 - ✓ Expansion of **green cover** along riverbanks to stabilize soil and reduce runoff pollution.
- **Removal of Encroachments**
 - ✓ Drives to remove **illegal constructions and encroachments** from the riverbed and floodplains.
 - ✓ Restoration of the **natural width and flow regime** of the river.
 - ✓ **Riverfront and Community Engagement**
 - ✓ **Beautification of river ghats** and public spaces to reconnect citizens with the river.
 - ✓ Awareness campaigns to promote **river stewardship and responsible behaviour**.

Institutional Mechanism

Gomti Task Force

- Constituted under the **National Mission for Clean Ganga (NMCG)** in January 2025.
- Members include:
 - ✓ State Clean Ganga Mission
 - ✓ Irrigation Department
 - ✓ Uttar Pradesh Pollution Control Board
 - ✓ Jal Nigam
 - ✓ Urban local bodies and development authorities
 - ✓ Subject experts

Monitoring and Accountability

- **Monthly review meetings** of the Task Force
- **Quarterly progress reports** to the Chief Minister's Office
- Assurance of **adequate financial and logistical support**, including equipment such as track boats, floating barriers, and excavators.

Significance of the Gomti Rejuvenation Mission

- **Environmental Significance:** The mission will improve **water quality and ecological flow** by intercepting untreated sewage, reviving wetlands, and restoring natural river channels, thereby strengthening **aquatic biodiversity** and the overall **Ganga river system**.
- **Urban and Social Significance:** By enhancing **urban sanitation, public health, and flood resilience**, especially in cities like Lucknow, the mission reconnects urban populations with the river while improving **liveability and water security**.
- **Governance Significance:** The initiative reflects a shift towards **integrated river basin governance**, ensuring inter-departmental coordination, regular monitoring, and accountability under the **National Mission for Clean Ganga (NMCG)** framework.

Challenges

- **Infrastructure and Sewage Management:** Rapid urbanisation has outpaced **STP capacity and maintenance**, making complete interception of drains and sustained pollution control a major implementation challenge.
- **Encroachment and Land-use Pressure:** Long-standing **encroachments on floodplains and riverbanks** have narrowed the river channel, obstructing natural flow and complicating restoration efforts.
- **Behavioural and Institutional Constraints:** Limited **public awareness**, weak community participation, and coordination gaps among multiple agencies hinder long-term sustainability of river rejuvenation efforts.

Way Forward

- **Strengthening Pollution Control:** Upgrading STPs with **real-time monitoring**, decentralised treatment systems, and strict enforcement of discharge norms is essential for sustained water quality improvement.

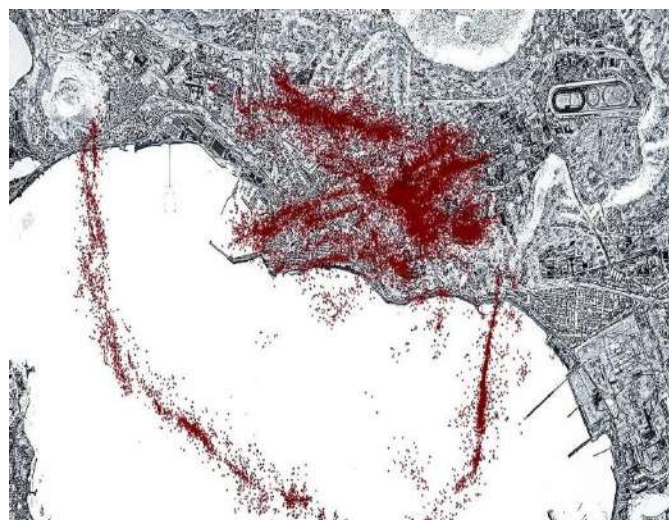
- **Ecological and Nature-based Solutions:** Restoration of **wetlands, floodplains, and riparian vegetation** should be prioritised to enhance natural purification, groundwater recharge, and climate resilience.
- **Participatory and Accountable Governance:** Ensuring **community involvement**, transparent reporting, third-party audits, and continuous political commitment will be critical to the mission's long-term success.

Conclusion

The **Gomti Rejuvenation Mission** represents a comprehensive and ecosystem-based approach to river restoration. If implemented effectively, it can serve as a **model for rejuvenating urban rivers in India**, contributing to sustainable water management, environmental conservation, and improved quality of life, in line with the broader objectives of **Namami Gange** and **Sustainable Development Goals (SDGs)**.

AI-BASED SEISMIC MAPPING AT CAMPFI

Why in News: A recent study published in the journal Science reports that an Artificial Intelligence (AI) based seismic analysis has revealed a previously hidden **ring-shaped geological fault** beneath Italy's Campi Flegrei volcanic region. This fault has been linked to tens of thousands of undetected earthquakes between 2022 and 2025 and may be capable of generating **moderate to strong earthquakes (up to magnitude 5)**.



About Campi Flegrei Volcano

- **Location:** West of Naples, Italy
- **Type:** Large volcanic caldera (collapsed volcanic depression)

- **Size:** About 11 km (7 miles) in diameter
- **Population at Risk:**
 - ✓ ~3.6 lakh people live within the caldera
 - ✓ ~15 lakh people reside in the surrounding metropolitan region

Geological Significance

- Campi Flegrei is considered one of Europe’s most dangerous volcanoes.
- Over the past **40,000 years**, it has produced **two of the largest eruptions in European history**.
- The region has a long history of **bradyseism** (slow uplift and subsidence of land), particularly affecting the town of **Pozzuoli**.

Key Findings of the AI-Based Study

- **Massive Under-Detection of Earthquakes**
 - ✓ Traditional seismic monitoring recorded about **12,000 earthquakes** between 2022 and mid-2025.
 - ✓ The AI model identified nearly **54,000 seismic events** during the same period.
 - ✓ This indicates that **around 75% of earthquakes had gone undetected** using conventional methods.
- **Discovery of a “Ring Fault”**
 - ✓ By mapping the newly detected earthquakes, scientists identified a **clear, ring-shaped fault** surrounding the central uplift zone of the caldera.
 - ✓ This **ring fault extends both onshore and offshore** and encircles areas experiencing maximum ground uplift.
 - ✓ Such ring faults are typically associated with **caldera dynamics** and can act as zones of seismic stress release.
- **Earthquake Hazard Potential**
 - ✓ Two significant faults were found converging beneath **Pozzuoli**, the same town that witnessed large-scale evacuations in the 1980s.
 - ✓ Scientists caution that **earthquakes of magnitude 5 are plausible**, which could cause serious damage in densely populated areas.
- **Ongoing Ground Uplift**
 - ✓ The ground beneath Pozzuoli is currently rising at a rate of **about 10 cm per year**.
 - ✓ The uplift zone is almost entirely surrounded by the newly identified ring fault, indicating structural control over surface deformation.

Role of Artificial Intelligence in the Study

- **Traditional Seismic Monitoring**
 - ✓ Relies on identifying sudden increases in ground vibrations (“phase picking”) from seismograms.
 - ✓ Effective but limited in detecting **small, overlapping, or low-intensity seismic events**.
- **AI-Based Approach**
 - ✓ A machine learning model was trained using **millions of expert-labelled seismic records**.
 - ✓ The system “learns” patterns of earthquakes and improves detection accuracy over time.
 - ✓ This enabled identification of **previously invisible seismic structures** beneath the volcano.
- **Important Observations and Limitations**
 - ✓ All detected earthquakes were **shallow (above 4 km depth)**.
 - ✓ There is **no evidence of magma migration** towards the surface so far.
 - ✓ Hence, while seismic risk has increased, **no immediate eruption warning** is indicated.

Significance

- **Disaster Risk Reduction:** Improved detection and fault identification enable better assessment of earthquake hazards, helping authorities plan mitigation and evacuation strategies.
- **Early Warning Enhancement:** Although not predicting eruptions, AI strengthens early-warning systems by providing more reliable and real-time seismic monitoring.
- **Urban Safety Planning:** Accurate seismic mapping supports safer infrastructure design and land-use planning in densely populated volcanic regions.
- **Global Replicability:** AI-based seismic tools can be applied to other active volcanic and earthquake-prone regions worldwide, improving global disaster preparedness. The AI model can be applied to other seismically active volcanic regions such as:
 - ✓ **Santorini (Greece)**
 - ✓ **Mount Etna (Italy)**
 - ✓ Other restless calderas worldwide

Conclusion

The AI-driven discovery of a ring fault at Campi Flegrei marks a significant advancement in volcanic hazard assessment. While it does not signal an imminent eruption, it reveals hidden seismic risks in one of the world’s most densely populated

volcanic regions. The study underscores how **artificial intelligence can strengthen disaster preparedness, improve scientific understanding, and support evidence-based policy decisions**, making it highly relevant in the context of modern governance and sustainable development.

ARMENIA - NEWEST MEMBER OF IUCN

Why in News: Armenia has become the **newest State Member of the International Union for Conservation of Nature (IUCN)**. The announcement was made during the **IUCN World Conservation Congress held in Abu Dhabi**. The move highlights Armenia's growing commitment to **biodiversity conservation, sustainable development, and global environmental governance**.

International Union for Conservation of Nature (IUCN)

- **Established:** 1948
- **Headquarters:** Gland, Switzerland
- **Nature:** World's largest global environmental network
- **Members:** Over 1,400 members, including States, government agencies, NGOs, and indigenous organizations
- **Key Functions:**
 - ✓ Maintains the **IUCN Red List of Threatened Species**
 - ✓ Develops **science-based conservation standards and tools**
 - ✓ Supports **Nature-based Solutions (NbS)**
 - ✓ Advises governments on biodiversity policy and environmental law

Significance of Armenia's Membership

- Provides Armenia **access to global scientific expertise, conservation tools, and international partnerships**.
- Strengthens national capacity for **biodiversity monitoring, ecosystem restoration, and sustainable land use**.
- Supports Armenia's preparations to host **COP-17 of the Convention on Biological Diversity (CBD) in 2026**, enhancing its global environmental profile.
- Aligns Armenia's environmental laws and practices with **international conservation standards**.

Armenia's Biodiversity Profile

- **Geographical Location:** At the crossroads of **Europe and Asia**, contributing to high ecological diversity.

- **Major Ecosystems:**
 - ✓ Alpine meadows
 - ✓ Mountain forests
 - ✓ Semi-deserts
 - ✓ Freshwater ecosystems (lakes and rivers)

Notable Species

- **Caucasian Leopard** – Critically Endangered
- **Bezoar Goat** – Endemic and threatened
- **Sevan Trout** – Endemic to **Lake Sevan**

These species underline Armenia's role as a **biodiversity hotspot** in the Caucasus region.

Policy Initiatives Undertaken by Armenia

- **National Biodiversity Strategy and Action Plan (NBSAP)**
- **Red Book of Armenia**, documenting threatened flora and fauna
- Expansion of **protected areas**
- **Forest restoration initiatives**
- Alignment of national environmental laws with **global frameworks**

Key Challenges

- Weak **biodiversity monitoring systems**
- Need for stronger **legal enforcement mechanisms**
- Inadequate **long-term financing for conservation**
- Pressures from **climate change, land degradation, and habitat fragmentation**

Way Forward

- Leveraging IUCN's **science-based tools and policy guidance**
- Enhancing **Nature-based Solutions** in national planning
- Strengthening **institutional capacity and conservation financing**
- Promoting regional and global cooperation in biodiversity governance

Armenia's Green Transition Goals

- **Forest restoration across 12.9% of national territory by 2030**
- Protection of **freshwater ecosystems**, especially Lake Sevan
- Mainstreaming biodiversity into **development planning**

Conclusion

Armenia's entry into the IUCN marks an important step toward **strengthened biodiversity conservation and environmental leadership**. As the world faces accelerating ecological challenges, such international cooperation is crucial for achieving the goals of the **Convention on Biological Diversity and the UN Sustainable Development Goals**.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to the International Union for Conservation of Nature (IUCN) and India, consider the following statements:

1. India has been a State Member of the IUCN since 1969.
2. The IUCN Red List of Threatened Species is prepared exclusively by the United Nations Environment Programme (UNEP).
3. Institutions such as the Wildlife Institute of India (WII) and the Bombay Natural History Society (BNHS) are associated with IUCN activities.

Which of the statements given above is/are correct?

- (a) 1 and 3 only
- (b) 1 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Answer: (a)

DISCOVERY OF A NEW BEGONIA SPECIES

Why in News: Scientists have discovered a **new species of Begonia** in the **Basar region of Laparada district, Arunachal Pradesh**, adding to India's rich floral biodiversity and highlighting the ecological significance of the Eastern Himalayan region.

Background



- **Begonia** is one of the largest genera of flowering plants, found mainly in tropical and subtropical regions.
- India, particularly the **North-Eastern region**, is known for high plant diversity due to varied topography, climate, and rainfall.
- Arunachal Pradesh lies within the **Eastern Himalayan Biodiversity Hotspot**, recognised globally for high endemism and species richness.

Key Highlights of the Discovery

- The new species was identified by scientists from the **State Horticulture Research and Development Institute (SHRDI)** during field surveys.
- The plant is distinguished by its **bright red leaves and unique morphological features**.
- It has been named **Chowna Buku Chulu**, honouring Arunachal Pradesh's **Deputy Chief Minister Chowna Mein** for his role in strengthening horticultural research infrastructure.
- The discovery underscores the **scientific potential of unexplored forest regions** in Northeast India.

Significance of the Discovery

- **Ecological Significance**
 - ✓ Enhances understanding of **plant diversity and ecosystem resilience**.
 - ✓ Supports conservation planning by identifying ecologically sensitive areas.
 - ✓ Reinforces the global importance of the Eastern Himalayas.
- **Scientific Importance**
 - ✓ Contributes to **taxonomic research** and botanical documentation.
 - ✓ Opens possibilities for **pharmacological and ornamental research**.
 - ✓ Strengthens India's biodiversity database under global frameworks like the **Convention on Biological Diversity (CBD)**.
- **Cultural and Institutional Significance**
 - ✓ Naming the species reflects **integration of science with local identity and governance**.
 - ✓ Highlights the role of **state-level research institutions** in biodiversity conservation.

Challenges Highlighted

- **Habitat loss** due to deforestation and infrastructure expansion.

- **Climate change** affecting fragile Himalayan ecosystems.
- **Limited documentation** of flora in remote regions.
- Inadequate scientific manpower and research funding in northeastern states.

Way Forward

- Strengthen **botanical surveys and biodiversity mapping** in unexplored regions.
- Enhance **institutional capacity** of state research bodies.
- Promote **community participation** and indigenous knowledge in conservation.
- Integrate discoveries into **policy frameworks** such as the National Biodiversity Action Plan.
- Encourage sustainable eco-tourism while ensuring habitat protection.

PALAU HOSTS THE WORLD'S FIRST LIVE UNDERWATER INTERVIEW

Why in News: Palau, a small Pacific island nation, recently hosted the **world's first-ever live underwater interview** to highlight the urgency of **ocean conservation and climate change**. The interview was conducted by **Palau President Surangel Whipps Jr.** with **Estonian Olympic swimmer and environmental activist Merle Liivand** beneath the ocean surface.

About Palau

- **Location:** Western Pacific Ocean, east of the Philippines
- **Geography:** An archipelago of about **340 islands**
- **Vulnerability:** Highly exposed to **sea-level rise, coral bleaching, and climate-induced coastal erosion**
- **Economic dependence:** Fisheries and eco-tourism, both reliant on healthy marine ecosystems

Note: Palau is among the **Small Island Developing States (SIDS)** that face existential threats due to climate change despite contributing minimally to global greenhouse gas emissions.

The Underwater Interview: Key Features

- The interaction took place **underwater**, symbolising humanity's direct engagement with marine ecosystems.
- It aimed to create **global awareness** about the need for urgent action to protect oceans.
- President Whipps acknowledged that **some low-lying atolls of Palau may become uninhabitable** in the coming decades due to rising sea levels.



Technological Innovation: LiFi Talking Mask

- The interview was enabled by the **LiFi Talking Mask**.
- **LiFi (Light Fidelity)** uses **light waves instead of radio waves** to transmit sound and data underwater.
- **Significance of LiFi underwater:**
 - ✓ Radio waves do not travel effectively underwater.
 - ✓ LiFi enables **clear communication for divers, scientists, and rescue operations**.
- This demonstrates how **technology can support environmental advocacy and marine research**.

Global Context and Precedents

- **2009:** Former Maldives President **Mohamed Nasheed** held the world's first **underwater cabinet meeting** to draw attention to climate threats faced by island nations.
- **2019:** Former Seychelles President **Danny Faure** conducted an interview from a **submersible in the Indian Ocean**, focusing on ocean conservation.

Note: These events underline the growing use of **symbolic climate diplomacy** by vulnerable nations to influence global climate negotiations.

Significance for Climate Change and Ocean Governance

- **Ocean Conservation**
 - ✓ Oceans regulate climate by absorbing heat and carbon dioxide.
 - ✓ Threats include **ocean acidification, coral reef degradation, plastic pollution, and overfishing**.
- **Climate Justice**
 - ✓ SIDS like Palau face **disproportionate impacts** of climate change.
 - ✓ Raises ethical concerns regarding **equity, responsibility, and climate finance**.
- **Global Environmental Governance**
 - ✓ Reinforces commitments under:
 - **UN Sustainable Development Goal 14** (Life Below Water)

- **UNFCCC and Paris Agreement**

- ✓ Highlights the need for **ambitious mitigation by developed countries** and **adaptation support** for vulnerable nations.

Relevance for India

- India has a **long coastline (7,500 km)** and a large **Blue Economy**.
- Faces similar challenges: **coastal erosion, sea-level rise, and marine pollution**.
- Aligns with India's initiatives such as:

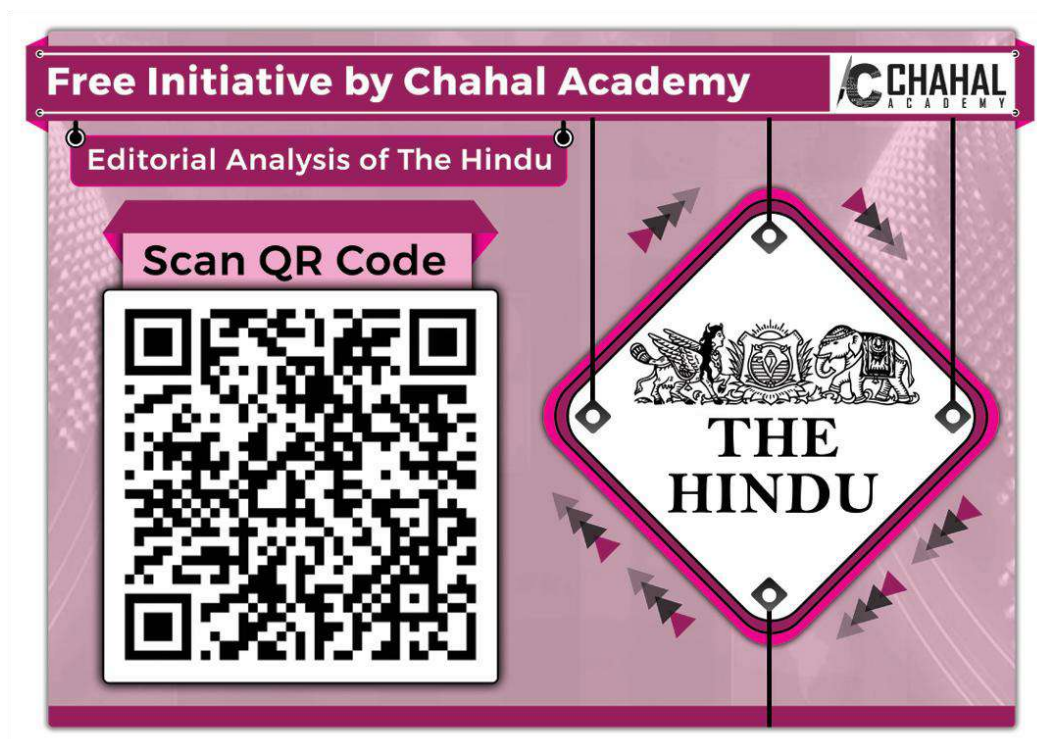
- ✓ **Deep Ocean Mission**

- ✓ **National Coastal Mission**

- ✓ Advocacy for **climate justice** at global platforms

Conclusion

Palau's underwater interview is a powerful example of **innovative environmental diplomacy**, blending technology, symbolism, and leadership to convey an urgent global message. As climate impacts intensify, such initiatives remind the world that **protecting oceans is central to humanity's survival**, not merely an environmental concern.



SCIENCE & TECHNOLOGY

WORLD CEREBRAL PALSY DAY 2025

Why in News: The Department of Empowerment of Persons with Disabilities (DEPwD) under the Ministry of Social Justice and Empowerment observed **World Cerebral Palsy Day 2025** across India to promote awareness, inclusion, and empowerment of persons with Cerebral Palsy.

About Cerebral Palsy

- **Definition:** Cerebral Palsy (CP) is a **group of permanent neurological disorders** affecting movement, posture, and muscle coordination. It results from **damage or abnormal development of the brain** before, during, or shortly after birth.
- **Nature of the Disorder:** CP is **non-progressive** (the brain injury does not worsen over time), but its effects on physical function can change as the person grows.
- **Symptoms and Impact:**
 - ✓ Difficulty in movement and coordination.
 - ✓ Spasticity (muscle stiffness) or involuntary movements.
 - ✓ Problems with posture, balance, speech, and swallowing.
 - ✓ Associated conditions may include visual or hearing impairment, intellectual disability, or seizures.
- **Prevalence:**

According to the World Health Organization (WHO), **Cerebral Palsy is the most common motor disability in childhood**, affecting roughly **2 to 3 per 1,000 live births worldwide**.

Theme and Objective of World Cerebral Palsy Day 2025

- **Theme:** “Unique and United” The theme highlights the need for **unity, inclusion, and empowerment** of people with Cerebral Palsy, while celebrating their individuality and strength.
- **Objective:**
 - ✓ To increase **public awareness** and understanding of CP.
 - ✓ To highlight the importance of **early diagnosis and rehabilitation**.

- ✓ To encourage **family and community support** for persons with disabilities.
- ✓ To promote **inclusive education, skill training, and employment opportunities**.

Key Programmes Organized Across India

- **Swami Vivekanand National Institute of Rehabilitation Training and Research (SVNIRTAR), Odisha:**
 - ✓ Organized a **Walking Competition** and **Target Ball Game** for children with CP.
 - ✓ Activities were designed to showcase their strength, coordination, and confidence.
- **National Institute for Locomotor Disabilities (NILD), Kolkata:**
 - ✓ Hosted a **Sit and Draw Competition** and a **Cultural Programme**.
 - ✓ Over 100 participants, including children, parents, and caregivers, attended under the theme “Unique and United.”
- **National Institute for Empowerment of Persons with Multiple Disabilities (NIEPMD), Chennai:**
 - ✓ Conducted an **Awareness Programme for Parents** of children with CP and Autism Spectrum Disorder (ASD).
 - ✓ Sessions focused on therapy options, early intervention, and family guidance.
- **Composite Regional Centres (CRCs):**
 - ✓ **Tripura:** Held awareness sessions on early diagnosis and intervention.
 - ✓ **Nellore:** Focused on mental health awareness and community participation.
 - ✓ **Bhopal:** Observed both World Cerebral Palsy Day and Mental Health Week with interactive school-based sessions for students and teachers.
- These initiatives reflect India’s growing emphasis on **community-level rehabilitation and awareness-building** for persons with disabilities.

Significance of the Observance

- Encourages **inclusive participation** and **social integration** of persons with disabilities.

- Promotes **awareness among families and communities** about early intervention and special education.
- Reinforces India's commitment to the **Rights of Persons with Disabilities (RPwD) Act, 2016**, which recognizes **21 categories of disabilities** including Cerebral Palsy.
- Contributes to India's obligations under the **UN Convention on the Rights of Persons with Disabilities (UNCRPD)**.

Major Government Initiatives for Persons with Disabilities

- **Accessible India Campaign (Sugamya Bharat Abhiyan):**
 - ✓ Aims to make built environments, public transport, and ICT accessible for all.
- **Deendayal Disabled Rehabilitation Scheme (DDRS):**
 - ✓ Provides financial assistance to NGOs working for the welfare of persons with disabilities.
- **Unique Disability ID (UDID) Project:**
 - ✓ Creates a national database for persons with disabilities and simplifies access to benefits.
- **National Institutes and Composite Regional Centres:**
 - ✓ Serve as **centres of excellence** for rehabilitation, training, and awareness across India.
- **Inclusive Education under Samagra Shiksha:**
 - ✓ Ensures children with special needs are integrated into mainstream schools with proper support.

Challenges

- **Limited access** to early detection and therapy in rural areas.
- **Shortage of trained professionals** such as physiotherapists and speech therapists.
- **Social stigma** and lack of awareness among families.
- Need for **greater coordination** among health, education, and social welfare departments.

Way Forward

- Integrate **rehabilitation and early intervention** into primary healthcare systems.
- Expand **community-based rehabilitation (CBR)** models.
- Enhance **digital accessibility tools** and tele-rehabilitation services.
- Strengthen **awareness campaigns** to promote acceptance and empathy.
- Encourage **public-private partnerships** to improve research and assistive technology innovation.

Conclusion

The observance of World Cerebral Palsy Day 2025 symbolizes India's continued journey toward **inclusive development and social justice**. By combining policy efforts, community participation, and technological innovation, India can ensure that persons with disabilities live with dignity, equality, and independence — fulfilling the vision of an **inclusive and empowered society**.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to Cerebral Palsy (CP), consider the following statements:

1. It is a non-progressive neurological disorder caused by damage to the developing brain.
2. It primarily affects movement, muscle tone, and posture.
3. It can be completely cured with early physiotherapy.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (a)

COUGH SYRUP CONTAMINATION AND REVISED SCHEDULE M: STRENGTHENING DRUG SAFETY AND REGULATORY OVERSIGHT IN INDIA

Why in News: The **Union Health Ministry** has directed all drug manufacturers to ensure **strict compliance with revised Schedule M norms** under the Drugs and Cosmetics Act, 1940, following the deaths of several children due to consumption of contaminated cough syrup in **Madhya Pradesh and Rajasthan**. Licences of non-compliant pharmaceutical units will be cancelled.

Background of the Incident

- The alert arose after the **Tamil Nadu Drugs Control Department** detected **Diethylene Glycol (DEG)** contamination in samples of Coldrif cough syrup, produced by a unit based in **Kancheepuram, Tamil Nadu**.
- This followed multiple **child deaths in Madhya Pradesh and Rajasthan** attributed to the same brand.
- Subsequent inspections by the **Central Drugs Standard Control Organisation (CDSCO)** confirmed that the syrup contained DEG beyond permissible limits.

- Tamil Nadu's **Food and Drugs Administration (FDA)** issued an immediate stop-production order, while the CDSCO recommended **cancellation of the manufacturing licence** and **criminal action** against the firm.
- The Union Health Ministry held an **emergency meeting with all States and Union Territories** to ensure tighter enforcement and prevent similar tragedies.

Understanding Diethylene Glycol (DEG) Contamination

- **DEG and Ethylene Glycol (EG)** are toxic industrial solvents sometimes used **illegally as cheaper alternatives** to pharmaceutical-grade glycerin or propylene glycol in liquid formulations.
- **Toxicity:** DEG can cause **acute kidney failure, liver damage, metabolic acidosis, and neurological symptoms**, often leading to death — particularly among children.
- **Past Global Incidents:**
 - ✓ **The Gambia (2022):** Linked to contaminated Indian syrups.
 - ✓ **Uzbekistan (2022):** Similar fatalities traced to DEG-tainted cough syrups.
 - ✓ **Indonesia (2023):** 200+ child deaths linked to contaminated syrups.
- These incidents have drawn global attention to India's **pharmaceutical regulatory mechanisms**, given the country's role as the **"Pharmacy of the World."**

Revised Schedule M: Enhancing Manufacturing Standards

The **Schedule M** of the Drugs and Cosmetics Act, 1940 prescribes **Good Manufacturing Practices (GMP)** for pharmaceutical products. The **revised Schedule M (2024 update)** modernizes India's drug manufacturing standards in line with **World Health Organization (WHO)** and **International Council for Harmonisation (ICH)** norms.

Key Features of Revised Schedule M

- **Pharmaceutical Quality System (PQS):**
 - ✓ Establishes an integrated approach to ensure product quality from development to distribution.
- **Quality Risk Management (QRM):**
 - ✓ Introduces mechanisms to identify, analyze, and mitigate risks during all stages of drug production.
- **Infrastructure and Equipment Standards:**

- ✓ Mandates validated machinery, calibrated equipment, and computerised systems for data traceability.

- **Personnel and Training:**

- ✓ Requires regular staff training, competence certification, and record maintenance.

- **Documentation and Auditing:**

- ✓ Emphasizes transparency, digital record-keeping, and periodic internal quality audits.

- **Implementation Deadline:**

- ✓ All pharmaceutical manufacturers must comply by **December 31, 2025**.

Government Measures Following the Incident

- **Emergency Coordination:** The Health Ministry convened all State Drug Controllers and public health officials to review the status of GMP compliance and surveillance measures.
- **Regulatory Enforcement:**
 - ✓ Immediate suspension and recall of contaminated batches.
 - ✓ Cancellation of licences of violators under the Drugs and Cosmetics Rules, 1945.
 - ✓ Initiation of **criminal proceedings** against negligent firms.
- **Inspection Drive:** The **CDSCO** has begun a nationwide **risk-based inspection** of manufacturing units to assess adherence to revised norms.
- **Advisory to States:**
 - ✓ Ensure **rational use of cough syrups**, especially among children, as most respiratory infections are self-limiting.
 - ✓ Strengthen **pharmacovigilance** and reporting mechanisms through the **Integrated Health Information Platform (IHIP)**.
 - ✓ Enhance inter-State coordination for **early detection, sample testing, and joint action**.

Significance of the Health Ministry's Action

- **Public Health Protection:**
 - ✓ Prevents recurrence of preventable deaths due to substandard or adulterated drugs.
- **Restoring Global Trust:**
 - ✓ Ensures compliance with international standards to maintain India's reputation as a leading generic drug supplier.

- **Regulatory Modernisation:**
 - ✓ Strengthens India's regulatory ecosystem through digitalization, inspections, and traceability systems.
- **Alignment with Sustainable Development Goals (SDGs):**
 - ✓ Contributes to **SDG 3 (Good Health and Well-being)** by ensuring medicine safety and quality.

Challenges in Pharmaceutical Quality Control

- **Fragmented Regulatory Oversight:** Coordination gaps between Central and State regulators often delay enforcement.
- **Inadequate Infrastructure:** Many small and medium pharmaceutical enterprises lack resources to upgrade to GMP-compliant facilities.
- **Shortage of Skilled Personnel:** Limited availability of trained drug inspectors, analysts, and quality professionals.
- **Weak Post-Marketing Surveillance:** Inconsistent reporting and follow-up on adverse drug reactions and quality defects.
- **Export Pressure and Volume Manufacturing:** High global demand sometimes leads to compromised internal quality checks.

Way Forward

- **Regulatory Strengthening:**
 - ✓ Recruit and train more inspectors; enhance inter-agency data sharing and oversight.
- **Support for MSME Pharma Units:**
 - ✓ Provide **financial incentives and technical guidance** to upgrade infrastructure and adopt new standards.
- **Centralized Quality Database:**
 - ✓ Establish a **National Drug Quality Portal** listing compliant and non-compliant manufacturers.
- **Digital Surveillance:**
 - ✓ Utilize **AI-based tools** for batch tracking, market monitoring, and early detection of anomalies.
- **Public Awareness and Rational Drug Use:**
 - ✓ Promote community education on safe medicine usage, especially for paediatric and over-the-counter products.
- **International Collaboration:**
 - ✓ Strengthen ties with WHO, foreign regulators, and importing nations for real-time communication and transparent quality assurance.

Conclusion

The cough syrup contamination incident highlights a serious gap in **drug manufacturing oversight and ethical compliance**. The **revised Schedule M** provides an opportunity to rebuild trust and modernize India's pharmaceutical framework by focusing on **quality assurance, risk management, and regulatory accountability**.

Ensuring strict enforcement, capacity building, and collaboration among stakeholders will help India protect public health and reinforce its global standing as a **trusted pharmaceutical hub**.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to the revised Schedule M under the Drugs and Cosmetics Act, 1940, consider the following statements:

1. It lays down Good Manufacturing Practices (GMP) for pharmaceutical products in India.
2. It mandates the establishment of a Pharmaceutical Quality System and Quality Risk Management framework.
3. The deadline for compliance with revised Schedule M is December 31, 2025.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (d)

MILITARY COMBAT PARACHUTE SYSTEM (MCPS): DRDO'S LEAP TOWARDS SELF-RELIANCE

Why in News: The **Defence Research and Development Organisation (DRDO)** has successfully tested the **Military Combat Parachute System (MCPS)** through a combat freefall jump from **32,000 feet**, marking a major milestone in India's indigenous defence capability.

About the Military Combat Parachute System (MCPS)

- The **MCPS** is an **indigenously developed advanced parachute system** designed for **high-altitude combat freefall operations** of the Indian Armed Forces.
- It is currently the **only operational parachute system** capable of deployment **above 25,000 feet**, enabling

paratroopers to undertake specialized missions in high-altitude and hostile terrains.

Developing Agencies

- **Aerial Delivery Research and Development Establishment (ADRDE), Agra**
 - **Defence Bioengineering and Electromedical Laboratory (DEBEL), Bengaluru**
- Both are DRDO laboratories specializing in aerial delivery and life-support systems for defence applications.

Key Features of MCPS

- **Enhanced Tactical Capabilities:**
 - ✓ Lower rate of descent ensuring safe landings.
 - ✓ Superior steering control for accurate navigation to target zones.
- **High-altitude Operation:**
 - ✓ Can be deployed from aircraft flying above 25,000–32,000 feet.
- **Integration with NAVIC (Navigation with Indian Constellation):**
 - ✓ Provides indigenous navigation support.
 - ✓ Immune to foreign interference or denial-of-service risks.
- **Ease of Maintenance:**
 - ✓ Reduced turnaround time for inspection, repair, and servicing.
 - ✓ Higher operational lifespan compared to imported systems.

Significance

- **Strategic Independence:** Reduces dependence on foreign suppliers for parachute systems during conflict.
- **Operational Advantage:** Allows high-altitude precision drops in combat zones, enhancing special forces' capability.
- **Indigenization Drive:** Supports the Aatmanirbhar Bharat initiative and strengthens domestic defence manufacturing.
- **Technological Milestone:** Demonstrates India's advancement in **aerial delivery and bioengineering systems.**

Statements and Acknowledgements

- **Raksha Mantri Rajnath Singh** congratulated DRDO, Armed Forces, and industry partners, calling it a "significant milestone in India's indigenous defence capability."

- **Dr. Samir V. Kamat**, Secretary (Defence R&D) and Chairman, DRDO, praised the teams involved, describing the success as "a major step towards self-reliance in aerial delivery systems."

Way Forward

- Gradual **induction of MCPS** into operational units of the Army and Air Force.
- Development of **next-generation parachute systems** with improved load-bearing capacity and automated navigation.
- Integration with other indigenous defence technologies to boost India's **strategic mobility and rapid deployment** capability.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. With reference to the Military Combat Parachute System (MCPS), consider the following statements:

1. It is indigenously developed by DRDO and capable of deployment above 25,000 feet.
2. It is compatible with NAVIC, India's regional satellite navigation system.
3. It was jointly developed by ADRDE, Agra and DEBEL, Bengaluru.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (d)

THE GAGANYAAN CREW ESCAPE SYSTEM (CES)

Why in News: ISRO's rapid-acting Crew Escape System safeguards astronauts by detaching the module during launch emergencies.

Key Details:

- **Purpose:** The CES is designed to **safely eject the crew module** with astronauts from the rocket in case of a launch emergency, ensuring survival during critical ascent phases.
- **Mechanism:** It uses **multiple high-burn solid motors** that generate greater thrust than the launch vehicle, allowing rapid separation; parachutes then ensure a **controlled ocean splashdown.**

- **Tests Conducted:**
 - ✓ **Pad Abort Test (2018):** Validated ground escape at 2.75 km altitude.
 - ✓ **TV-D1 Test (2023):** Demonstrated in-flight abort at 16.9 km, Mach 1.25.
 - ✓ **Next test (TV-D2):** Planned for late 2025.
- **Safety Systems:** Equipped with an **Intelligent Vehicle Health Management System** that automatically triggers the escape during anomalies, minimizing false activations.
- **Significance:** The CES makes India the **fourth country** with indigenous human-spaceflight safety capability and is central to **Gaganyaan’s 2026 mission** to send 3 astronauts into 400 km low-Earth orbit.

Significance of Crew Safety in Human Spaceflight

- Human spaceflight is inherently risk-laden, particularly during ascent through the atmosphere when high dynamic loads, hypersonic speeds and launch vehicle uncertainties converge.
- In the Gaganyaan architecture, the human-rated launch vehicle HLV Mark-3 (the human-rated version of LVM3) uses large solid-motor boosters (S200) which cannot be shut down once ignited raising risk in failure-scenarios.
- The CES steps in as a “lifeboat” concept for the crew module, enabling quick separation from a failing vehicle, thereby safeguarding lives.

Technical Architecture of the CES

- **Positioning:** The CES is mounted at the forward end of the launch vehicle, directly above the crew module.
- **Propulsion:** The system uses multiple high-performance solid-motor rockets with high burn-rates to generate acceleration substantially greater than the main launch vehicle, enabling quick separation of the crew module.
- **Separation sequence:**
 - ✓ A “puller” motor initiates the escape, applying acceleration levels up to ~10 g (within human tolerance) to “throw” the crew module clear.
 - ✓ Attitude-control thrusters stabilise the module away from the vehicle.
 - ✓ Following safe clearance, the escape tower or motor stack is jettisoned to reduce mass.
 - ✓ Drogue parachutes deploy to stabilise and slow descent; main parachutes bring the module to a controlled splashdown in the ocean.

- ✓ Behind these is an Intelligent Vehicle Health Management system-sensors monitor launch-vehicle behaviour and trigger the CES in milliseconds to guard against both pad-abort and in-flight failures.

- **Operational regime:** The CES must function in diverse scenarios pad abort (zero or low altitude), early-ascent abort (supersonic through Mach >5 region), and higher-altitude abort during atmospheric flight.
- **Human-rating of HLV:** The launch vehicle (HLV) is being modified from the regular LVM3 to meet human-rating standards (redundancy, lower vibration and acoustics, re-qualification of systems) — the CES complements these efforts by addressing the worst-case contingency.

Demonstration & Qualification History

- **Pad Abort Test – 5 July 2018:**
 - ✓ A CES with simulated crew module (~12.6 tonnes) lifted off from Satish Dhawan Space Centre, reached ~2.7 km, flight duration ~259 s, parachuted into Bay of Bengal ~2.9 km down-range.
 - ✓ About 300 sensors measured key parameters during the test. It validated rapid escape from pad environment.
- **In-flight Abort Demonstration – TV-D1 (October 2023):**
 - ✓ Test vehicle launched; at altitude ~16.9 km and speed approx Mach 1.21 (~550 km/h), the CES activated separation of crew module.
 - ✓ The crew module was successfully recovered after splash-down — ISRO declared the CES “performed as intended”.
- **Upcoming Qualification – TV-D2 (late 2025):**
 - ✓ To test the CES in “varied abort conditions” such as higher altitude or different failure modes, further asserting reliability >99.8 %.
- **Parachute & Recovery System Integration:**
 - ✓ In parallel, parachute systems (drogue, pilot, main) developed by Aerial Delivery Research & Development Establishment (ADRDE) under Defence Research and Development Organisation (DRDO) are being integrated and tested for splash-down and recovery phases.

Strategic and Policy Implications

- **National prestige & space-capability:** Gaganyaan aims to make India the **fourth** nation (after US, Russia, China) with independent human-spaceflight capability — the CES is a core piece of that narrative.

- **Crew safety as mission imperative:** As human life becomes part of national space missions, safety systems (such as the CES) take precedence over simply reaching orbit reflecting matured space-policy thinking.
- **Technology spin-offs:** The high-burn motors, fast-actuation systems, health-monitoring sensors and parachute recovery technologies offer spin-off potential for high-reliability systems in broader aerospace and defence sectors.
- **International collaboration & competition:** By developing human-spaceflight safety systems indigenously, India strengthens its technological sovereignty and may participate in future international human-spaceflight endeavours on more equal terms.
- **Risk management & human-rating:** The process underscores the heightened focus on risk mitigation, redundancy, system qualification and “fail-safe” design inherent in human-spaceflight beyond conventional unmanned missions.

Challenges & Way Forward

- **Achieving reliability targets:** ISRO has targeted reliability over 99.8 % reaching such high levels requires multiple test flights under varying conditions, high fidelity data and full system integration.
- **Higher altitude / hypersonic regime:** Future aborts may occur at velocities beyond Mach 5 and/or higher altitudes; the CES must reliably function across that expanded envelope.
- **Integration with life-support and crew-module systems:** The CES must seamlessly integrate with the crew module’s avionics, life-support, deceleration and splash-down systems. Any mismatch could compromise astronaut safety.
- **Recovery & post-splashdown operations:** Safe Ocean splashdown is only part of the problem — recovery logistics (ships, diving teams, tracking, crew medical care) must also be refined.
- **Timeline pressures:** Earlier targets for Gaganyaan (2026) have seen delays; the timeline slip enhances the challenge of maintaining technical readiness and budget discipline.
- **Human training & operational readiness:** Astronauts must train in the full integrated scenario including CES activation, rapid separation, module deceleration,

splash-down and evacuation. Systems must support human-centric operations under stress.

Conclusion

The CES developed by ISRO under the Gaganyaan programme is more than a technical add-on: it symbolises India’s determination to conduct safe, credible crewed space missions. By emphasising astronaut survival and emergency-escape capability, ISRO is aligning with global best practices in human-spaceflight engineering. Soon launching astronauts into ~400 km orbit for three days, the mission stands on the bedrock of systems like the CES. For India’s space-endeavour, safety is no longer optional, it is foundational.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to ISRO’s Gaganyaan Crew Escape System (CES), consider the following statements:

1. The CES uses high-burn liquid engines to separate the crew module from the launch vehicle during emergencies.
2. The Intelligent Vehicle Health Management System enables automatic activation of the CES upon detecting anomalies.
3. The first successful in-flight abort test of CES (TV-D1) was conducted in 2023 at an altitude of around 17 km.

How many of the statements given above is/are **correct**?

(a) Only one
(b) Only two
(c) All the three
(d) None

Answer: b (2&3 only)

EMERGING SCIENCE, TECHNOLOGY & INNOVATION CONCLAVE (ESTIC)

Why in News: The Department of Science and Technology (DST) will organise the **first-ever Emerging Science, Technology and Innovation Conclave (ESTIC)** in November 2025. The conclave is expected to **replace the Indian Science Congress**, India’s oldest scientific gathering.

About ESTIC

- **Emerging Science, Technology and Innovation Conclave (ESTIC)** is envisioned as **India’s premier platform** to showcase and deliberate upon cutting-edge scientific and technological innovations.

- The inaugural event will be held at **Bharat Mandapam, New Delhi**, in November 2025.
- ESTIC aims to bring together:
 - ✓ All **science-related Ministries** (Space, Atomic Energy, Biotechnology, IT, Earth Sciences, etc.)
 - ✓ Global scientists, innovators, industry leaders and policymakers.

Key Features

- **Multi-Stakeholder Participation**
 - ✓ Includes ministries, scientific departments, academia, research labs, start-ups, and global institutions.
- **Deep-Tech Showcase**
 - ✓ **11 thematic technical sessions** covering frontier areas like AI, quantum tech, space tech, biotech, materials science, and green technologies.
 - ✓ **75 exhibition stalls** by **deep-tech start-ups**, highlighting indigenous innovation.
- **Global Thought Leaders**
 - ✓ Expected dignitaries include:
 - **Andre Geim (Nobel Laureate, Physics – 2010)**
 - **Jean-Yves Le Gall** (Former President, French Space Agency)
- **Objective**
 - ✓ Promote collaboration, inspire young innovators, and position India as a global leader in emerging technologies.

Significance of ESTIC

- **Modernises India's scientific ecosystem** with a future-oriented platform.
- Encourages **industry-academia-government linkages** for advanced research.
- Supports **Start-up India and Atmanirbhar Bharat** through promotion of deep-tech start-ups.
- Strengthens India's push for **science-led economic growth**.
- Boosts India's global standing in **high-technology diplomacy**.

Comparison: ESTIC vs Indian Science Congress (ISC)

Feature	ESTIC (2025 onwards)	Indian Science Congress (till 2023)
Organising Body	Department of Science & Technology (DST)	Indian Science Congress Association (ISCA), Kolkata

Feature	ESTIC (2025 onwards)	Indian Science Congress (till 2023)
Focus	Emerging tech, innovation, deep-tech start-ups	Broad scientific community and research
Format	Thematic, innovation-driven, global participation	Traditional academic congregation
Future	Expected to replace ISC	Last held in 2023 (108th edition)
Orientation	Industry-academia-policy integration	Largely academic focus

About Indian Science Congress (ISC)

- **Oldest congregation of scientists** in India.
- Held annually during the first week of January.
- **108th edition** (last held) – 2023.
- Organised by **ISCA, Kolkata**, and **funded by DST**.
- Historically significant for promoting scientific temperament and national research networks.

SPARK - 4.0

Why in News: The **Central Council for Research in Ayurvedic Sciences (CCRAS)** under the **Ministry of Ayush** has launched **SPARK-4.0 (2025-26)**, a flagship initiative aimed at promoting research culture among undergraduate Ayurveda students. This programme aligns with the Government of India's broader vision of fostering evidence-based research and capacity-building in the Indian System of Medicine (ISM).

About SPARK-4.0

SPARK (Studentship Program for Ayurveda Research Ken) is a short-term studentship initiative that provides young Ayurveda students with exposure to research methodology and opportunities to undertake independent mini research projects.

Key Objectives

- To encourage **scientific inquiry and curiosity** among BAMS students.
- To develop **research aptitude, analytical skills**, and familiarity with basic research tools.
- To provide **hands-on training** in research methodology through small-scale projects.
- To strengthen **evidence-based practices** within Ayurveda.

Key Features

- **Beneficiaries**
 - ✓ **300 BAMS students** enrolled in **NCISM-recognised colleges**.
 - ✓ Eligible students: **1st–4th year (before final exams)**.
- **Studentship Value**
 - ✓ **₹50,000 total** (₹25,000 per month for 2 months).
 - ✓ Disbursed **after successful completion and approval of the final research report**.
- **Mentorship Structure**
 - ✓ Each student works under a **full-time faculty guide** within their own institution.
 - ✓ Only **two students per guide** permitted.
 - ✓ **Group projects are not allowed**.

Eligibility Conditions

- Must be an **Indian national** studying in an NCISM-approved Ayurveda college.
- **Not eligible:**
 - ✓ Interns
 - ✓ Postgraduate (PG) students
 - ✓ Non-Resident Indians (NRIs)
 - ✓ Students studying in non-recognised institutions

Significance of the Initiative

- **Strengthening Research Ecosystem:** SPARK–4.0 enhances research capacities at the undergraduate level, nurturing a future workforce capable of contributing to **scientific advancements in Ayurveda**.
- **Promoting Evidence-Based Ayurveda:** This initiative bridges the gap between traditional knowledge and modern scientific inquiry, promoting **validation, standardisation, and documentation** within the Ayurveda system.
- **Developing Future Researchers:** By providing early exposure to scientific thinking and methodology, SPARK prepares students for **higher studies, clinical research, and interdisciplinary collaborations**.

Conclusion

The **SPARK–4.0 initiative** is a forward-looking step toward creating a robust research culture within Ayurveda education in India. By empowering BAMS students with skills in scientific inquiry and project-based learning, the scheme contributes significantly to strengthening the credibility, relevance, and global acceptance of Ayurveda as a scientific medical system.

Why in News: The Automotive Research Association of India (ARAI) is examining the feasibility of **blending Isobutanol with diesel**, especially after earlier attempts to blend ethanol with diesel proved ineffective. The initiative aligns with India's broader objective of leveraging biofuels to cut emissions and advance the **net-zero target by 2070**.

What is Isobutanol?

- Isobutanol is a **higher molecular weight alcohol** known for its inflammability.
- It is widely used as an **industrial solvent** (paints, coatings, etc.).
- Produced via:
 - ✓ **Thermochemical pathways:** Synthesis gas → mixed alcohols
 - ✓ **Biochemical pathways:** Fermentation using specially engineered microbes

Why Consider Isobutanol for Diesel Blending?

- **Better Blending Characteristics than Ethanol**
 - ✓ **Higher energy content** than ethanol → enhances fuel performance.
 - ✓ **More pipeline-friendly** (less corrosive, easier to transport).
 - ✓ **Superior miscibility** with diesel without needing special additives.
 - ✓ **Lower hygroscopic nature** → absorbs less water → reduces corrosion risks.
- **Safer Combustion Characteristics**
 - ✓ **Higher flash point** than ethanol → lower volatility → safer for storage and transport.
 - ✓ Ethanol's low flash point was one major challenge in diesel blending attempts.
- **Feedstock Advantage**
 - ✓ Can be produced using the **same feedstock as ethanol:**
 - Sugarcane syrup, molasses, grains, etc.
 - ✓ This offers flexibility to **divert surplus ethanol production** towards Isobutanol.
- **Environmental and Economic Gains**
 - ✓ Potential to **reduce tailpipe emissions**.
 - ✓ Helps in **import substitution**, strengthening energy security.

Associated Concerns

- **Miscibility Issues**
 - ✓ Isobutanol may not mix perfectly with diesel under all conditions.
 - ✓ However, adding **biodiesel** can improve miscibility.
 - ✓ Biodiesel sources: non-edible oils, used cooking oil, animal fats.
- **Low Cetane Number**
 - ✓ Isobutanol has significantly **lower cetane number** than diesel.
 - ✓ Lower cetane → chances of **diesel knock**, incomplete combustion, reduced power, engine stress.
 - ✓ Solution: **Cetane-improving additives**, though they increase costs.
- **Pilot Stage**
 - ✓ The blending mechanism is still undergoing trials.
 - ✓ A pilot project may require **around 18 months** for full assessment.

Way Forward

- Conduct **comprehensive studies** across varied vehicle types and classes.
- Adopt **phased blending targets**, beginning with **≤10% blending**.
- Assess engine performance, emissions profiles, and long-term effects on components.
- Develop standards for fuel quality, additives, and storage norms.

Conclusion

If India successfully blends isobutanol with diesel at scale, it would become the **first country globally** to do so. With higher energy content, better safety parameters, and compatibility with existing ethanol feedstock, isobutanol holds promise as a new-generation biofuel. However, technical challenges—particularly related to cetane quality and miscibility—must be resolved through rigorous testing, policy support, and industry collaboration.

Free Initiative by Chahal Academy CCHAHAL ACADEMY

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DEFENCE & SECURITY

NATIONAL SECURITY GUARD (NSG)

Why in News: The Government of India has decided to establish a new hub of the National Security Guard (NSG) at Ayodhya in Uttar Pradesh. The NSG is India's elite force responsible for counter-terrorism and counter-hijacking operations.

About the National Security Guard

- The National Security Guard was formally established in 1986 through an Act of Parliament, known as the National Security Guard Act, 1986.
- The need for a specialised counter-terror force was felt after major internal security challenges such as Operation Blue Star (1984), the assassination of former Prime Minister Indira Gandhi, and major terrorist attacks, including the Akshardham Temple attack.
- **Objective:** The primary objective of the NSG is to combat terrorist activities and protect the country from internal disturbances. It is designed as a rapid-response force to deal with high-risk security situations.

Key Functions and Specialisations

- The NSG is trained to carry out a wide range of specialised operations, including:
 - ✓ Counter-terrorism and counter-hijacking operations on land, sea and air
 - ✓ Hostage rescue missions
 - ✓ Bomb detection, disposal and neutralisation of improvised explosive devices (IEDs)
 - ✓ Post-Blast Investigation (PBI)

Organisational Structure

- The NSG functions under the Ministry of Home Affairs (MHA). It has two major components:
 - ✓ **Special Action Group (SAG):** Comprising personnel from the Indian Army, it forms the main strike and assault wing of the NSG.
 - ✓ **Special Ranger Groups (SRG):** Comprising personnel from Central Armed Police Forces (CAPFs) and State Police Forces, it primarily handles VIP security duties.

Distinct Identity and Motto

- NSG personnel are commonly known as “**Black Cat Commandos**” due to their black uniforms and insignia.
- The force follows the motto “Sarvatra, Sarvottam, Suraksha”, reflecting its philosophy of swift action, precision strikes and immediate withdrawal after mission completion.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to the National Security Guard (NSG), consider the following statements:

1. The NSG was established under an Act of Parliament in 1986.
2. The Special Action Group (SAG) is primarily responsible for VIP security.
3. The NSG operates under the Ministry of Home Affairs.

Which of the statements given above is/are correct?

- (a) 1 and 3 only
- (b) 2 and 3 only
- (c) 1 and 2 only
- (d) 1, 2 and 3

Answer: (a)

BRAHMOS MISSILE

Why in News: The Defence Minister of India, Rajnath Singh, recently stated that the BrahMos missile represents India's growing indigenous strength in defence manufacturing. He highlighted its strategic capability by noting that it can reach targets across the entire region of Pakistan.


About the BrahMos Missile

- The BrahMos missile is a result of an Indo-Russian joint venture between India's DRDO and Russia's NPO Mashinostroyeniya. Its name is derived from two rivers the **Brahmaputra** in India and the **Moskva** in Russia.
- The standard version of the BrahMos missile has a range of **290 km**, while extended-range variants can strike targets up to **500 km**. Future developments, such as the proposed **BrahMos-II**, aim to achieve ranges of up to **1,500 km**.

- BrahMos is known as the **world's fastest cruise missile**, capable of flying at a speed of **Mach 2.8**, which is nearly three times the speed of sound.
- It is a **two-stage missile**, using a solid propellant booster in the first stage to achieve supersonic speed. In the second stage, a liquid ramjet engine propels the missile at very high speed during its cruise phase.
- The missile is designed for **multi-platform deployment** and can be launched from **land, sea, and air**. It is capable of operating in all weather conditions, both during the day and at night, with high accuracy.
- BrahMos follows the **"fire and forget" principle**, meaning it does not require further guidance after launch. It carries a **conventional warhead weighing between 200 and 300 kg**, making it highly effective for precision strikes.

Special Features of BRAHMOS cruise missile

- Universal Missile for multiple platforms
- "Fire and Forget" principle of operation
- High supersonic speed all through the flight
- Long flight with varieties of trajectories
- Low radar signature
- Pin point accuracy & high lethal power



Guidance System
Advanced guidance system incorporating high manoeuvres & steep dive capabilities

Propulsion System
Air-breathing ramjet propulsion for fuel-efficiency & supersonic speed

Wings & Fins
For better stability & accurate direction of missile during the flight

Solid State Propellant
Solid-propellant rocket for initial acceleration of the missile

Propulsion and Flight Characteristics

- Cruise missiles primarily use **jet engines** for propulsion. While most cruise missiles are subsonic and rely on turbofan or turbojet engines, supersonic cruise missiles like BrahMos use **ramjet engines**, enabling sustained high-speed flight.

'SAKSHAM' SYSTEM

Why in News: The Indian Army has initiated the procurement of the indigenously developed **SAKSHAM Counter-Unmanned Aerial System (C-UAS) Grid System** to strengthen airspace security against hostile drones and unmanned aerial threats.

About the SAKSHAM System

- **SAKSHAM**, which stands for **Situational Awareness for Kinetic Soft and Hard Kill Assets Management**, is an

indigenously developed **Counter-Unmanned Aerial System (UAS) Grid System** designed to counter emerging aerial threats on the modern battlefield.

Working and Architecture

- SAKSHAM is a **modular and advanced Command and Control (C2) system** that operates on the secure **Army Data Network (ADN)**. It integrates multiple sensors, counter-drone systems, and response mechanisms on a single digital platform, enabling coordinated and timely action against hostile drones.

Operational Significance

- The system ensures comprehensive airspace security across the newly defined **Tactical Battlefield Space (TBS)**. This expanded battlefield concept includes the **Air Littoral**, defined as airspace up to **3,000 metres (10,000 feet)** above ground level.

Objective

- The primary objective of the SAKSHAM system is to **detect, track, identify, and neutralise hostile drones and unmanned aerial systems in real time**, thereby enhancing battlefield awareness and force protection.

Development

- SAKSHAM has been developed indigenously in collaboration with **Bharat Electronics Limited (BEL), Ghaziabad**, supporting India's defence indigenisation and self-reliance efforts.

Key Features

- Provides **real-time detection, tracking, identification, and neutralisation** of hostile UAS.
- Generates a **Recognised UAS Picture (RUASP)** by integrating sensor inputs, counter-drone systems, and **AI-driven analytics** for commanders.
- Incorporates **AI-enabled predictive analysis**, real-time threat assessment, and automated decision support.
- Enables **synchronised response** by integrating Counter-UAS sensors with both **soft-kill and hard-kill systems**.
- Offers **3D battlefield visualisation** on a common **GIS-based platform**, integrating friendly and hostile UAS data.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to the SAKSHAM Counter-Unmanned Aerial System (C-UAS) Grid System, consider the following statements:

1. It is an indigenously developed Command and Control system for countering hostile drones and UAS.
2. It operates on the Army Data Network and integrates soft-kill and hard-kill counter-drone systems.
3. It provides airspace security only up to 1,000 metres above ground level.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (a)

TEJAS MK1A FIGHTER JET

Why in News: The Indian Air Force (IAF) is set to receive its first **Light Combat Aircraft (LCA) Tejas Mk1A** at Nashik, marking

an important milestone in India's indigenous fighter aircraft programme and strengthening domestic defence manufacturing.

About Tejas Mk1A Fighter Jet

- The **Tejas Mk1A** is an upgraded variant of India's indigenous **Light Combat Aircraft (LCA) Tejas**, developed and manufactured by **Hindustan Aeronautics Limited (HAL)**. It has been designed to significantly enhance the operational effectiveness of the Indian Air Force.
- The primary objective of the Mk1A variant is to improve **combat capability, survivability, and ease of maintenance** over the earlier Mk1 version. It incorporates more than **40 upgrades**, making it a more capable and efficient fighter aircraft.
- One of the key enhancements in the Tejas Mk1A is the integration of an **Active Electronically Scanned Array (AESA) radar**, which improves target detection, tracking, and engagement capabilities. The aircraft is also equipped with a **Unified Electronic Warfare Suite (UEWS)** along with an **Advanced Self-Protection Jammer Pod**, strengthening its ability to operate in hostile environments.
- Further, the Tejas Mk1A features an **upgraded Digital Flight Control Computer (DFCC Mk1A)**, which enhances manoeuvrability, stability, and overall flight performance. Design improvements have also resulted in **reduced weight and improved maintainability**, enabling quicker turnaround times between missions and higher operational availability.
- Overall, the induction of the Tejas Mk1A represents a major step towards **self-reliance in defence (Aatmanirbhar Bharat)** and the modernisation of the Indian Air Force.

TOMAHAWK MISSILES

Why in News: Russian President Vladimir Putin recently stated that any decision by the United States to supply **Tomahawk cruise missiles** to Ukraine would lead to a major escalation in tensions between Russia and the US.

About Tomahawk Missiles

- The **Tomahawk** is a **long-range, subsonic cruise missile** developed by the **United States Navy** for conducting precise strikes against land-based targets.

- Tomahawk missiles are launched from **naval ships or submarines** using a **Vertical Launch System (VLS)**. They are primarily designed for **precision conventional attacks** on high-value targets deep inside enemy territory.
- The missile has an operational range of **1,000 to 1,500 miles** (approximately **1,550 to 2,500 km**), allowing it to strike targets from a safe stand-off distance. Structurally, a Tomahawk missile is about **18.3 feet long** and weighs around **3,200 pounds**. It carries a **1,000-pound conventional warhead**, and some variants are capable of delivering **cluster munitions**.
- A key feature of the Tomahawk missile is its **high accuracy**. It flies at **very low altitudes**, helping it evade radar detection. Guidance is provided through a combination of **GPS, inertial navigation systems, and**

terrain contour mapping, enabling the missile to strike targets with an accuracy of about **10 metres**.

- The missile is designed to follow a **non-linear and flexible flight path**, reducing the chances of interception by enemy air defence systems. During the launch phase, it uses a **solid propellant booster**, after which a **turbofan engine** powers the cruise phase. The turbofan engine emits relatively low heat, making **infrared detection difficult**.

Operational History

- Tomahawk missiles were first used in combat during **Operation Desert Storm in 1991**. Since then, they have been employed in several military operations, including **US strikes in Syria in 2017**, demonstrating their role as a key precision-strike weapon in modern warfare.



SOCIAL ISSUES

GLOBAL NEUROLOGICAL HEALTH CRISIS

Why in News: The **World Health Organization (WHO)**, in its **Global Status Report on Neurology (October 2025)**, has warned that **neurological disorders now cause over 11 million deaths annually**, affecting more than **3 billion people worldwide**. The report highlights severe policy neglect, workforce shortages, and deep global inequities in neurological care.

Key Details

- Neurological disorders such as **stroke, dementia, epilepsy, migraine, and neurodevelopmental conditions** have emerged as one of the **largest contributors to global death and disability**. According to WHO, over **40% of the global population** lives with some form of neurological condition, yet **less than one-third of countries** have a national policy to address brain health.
- The report reveals stark inequalities:
 - ✓ **Low-income countries** face up to **80 times fewer neurologists** than high-income nations.
 - ✓ Only **25% of countries** include neurological disorders under **Universal Health Coverage (UHC)**.
 - ✓ Merely **18% of countries** allocate a **dedicated budget** for neurological care.
- Despite the growing burden, neurological health remains **chronically under-prioritised** within national health systems.

Significance of the Neurological Disease Burden

The rising burden of neurological disorders is significant because:

- It represents a **shift in global disease patterns** from communicable to non-communicable and chronic conditions.
- Neurological disorders often require **lifelong care**, rehabilitation, and social support.
- They contribute significantly to **lost productivity, poverty, and caregiver burden**.
- Many neurological conditions are **preventable or treatable** through early diagnosis and timely intervention.

- Neglect of brain health undermines progress towards **SDG 3 (Good Health and Well-being)** and **Universal Health Coverage**.

Thus, neurological health is no longer a niche medical concern but a **developmental and governance challenge**.

Major Neurological Conditions Identified

- As per WHO data (2021), the leading contributors to death and disability include:
 - ✓ Stroke
 - ✓ Neonatal encephalopathy
 - ✓ Migraine
 - ✓ Alzheimer's disease and other dementias
 - ✓ Diabetic neuropathy
 - ✓ Meningitis
 - ✓ Idiopathic epilepsy
 - ✓ Neurological complications of preterm birth
 - ✓ Autism Spectrum Disorders
 - ✓ Cancers of the nervous system
- These conditions cut across the **entire life cycle**, from neonatal stages to old age.

Key Challenges Highlighted by the WHO Report

- **Policy Deficit**
 - ✓ Only **32% of WHO Member States** have national neurological policies
 - ✓ Brain health remains marginal in national health planning
- **Workforce Shortages**
 - ✓ Acute lack of neurologists, rehabilitation specialists, and mental health professionals
 - ✓ Rural and underserved areas face the worst shortages
- **Inequitable Access to Care**
 - ✓ Limited availability of stroke units, rehabilitation services, and palliative care
 - ✓ Neurological disorders largely excluded from UHC packages
- **Caregiver Burden and Gender Inequity**
 - ✓ Only **46 countries** provide carer services
 - ✓ Informal caregivers, mostly women remain unrecognised and unsupported

- **Weak Data and Research Ecosystem**
 - ✓ Only **53% of countries** submitted data to WHO
 - ✓ Underfunded neurological research, especially in LMICs
- These gaps reflect **systemic neglect rather than lack of medical knowledge**.

India & Developing Countries: A Comparative Perspective

- In countries like India:
 - ✓ Rising life expectancy and NCD prevalence are increasing neurological disease burden.
 - ✓ Shortage of neurologists and rehabilitation facilities persists, especially in rural areas.
 - ✓ High out-of-pocket expenditure limits access to long-term care.
 - ✓ Existing schemes (Ayushman Bharat, NPCDCS) address NCDs broadly but lack **explicit focus on brain health**.
- This places neurological disorders at the intersection of **health inequality, ageing population, and economic vulnerability**.

WHO's Roadmap for Change

- WHO has urged countries to implement the **Intersectoral Global Action Plan on Epilepsy and Other Neurological Disorders (2022)**, which calls for:
 - **Policy Prioritisation**
 - ✓ Elevating brain health as a national health priority
 - ✓ Dedicated funding and leadership
 - **Universal Health Coverage**
 - ✓ Inclusion of neurological services under essential health packages
 - **Life-Course Approach**
 - ✓ Prevention, early diagnosis, rehabilitation, and palliative care
 - **Data and Accountability**
 - ✓ Strengthening health information systems
 - ✓ Evidence-based policymaking
 - **People-Centric Governance**
 - ✓ Involving persons with lived experience in policy design

Way Forward

- To address the neurological health crisis, countries must:
 - ✓ Integrate brain health into **primary healthcare systems**

- ✓ Expand **training and retention** of neurological health professionals
- ✓ Promote **preventive strategies** such as stroke prevention, maternal care, and injury reduction
- ✓ Provide **social security and legal protection** for caregivers
- ✓ Strengthen **research, surveillance, and global cooperation**

- A shift from episodic care to **continuum-based neurological care** is essential.

Conclusion

The WHO report makes it clear that the global neurological crisis is not driven by lack of solutions, but by **policy inertia, inequitable health systems, and underinvestment**. With over **11 million deaths annually and billions affected**, neglecting brain health threatens both **human dignity and sustainable development**. Urgent, coordinated, and equity-driven action is imperative to ensure that neurological care becomes a **core pillar of global health governance** rather than a peripheral concern.

WORLD MENTAL HEALTH DAY

Why in News: On the occasion of **World Mental Health Day**, the Union Ministry of Health and Family Welfare highlighted enhancements under the **National Tele-Mental Health Programme (Tele-MANAS)** to strengthen access to mental healthcare services across India.

What is Tele-MANAS Programme?

- **Tele-MANAS** is a national digital mental health initiative launched to provide **free, round-the-clock mental health support** through tele-counselling.
- It forms a key pillar of India's efforts to integrate **mental healthcare with digital public health infrastructure**.

App and Service Enhancements

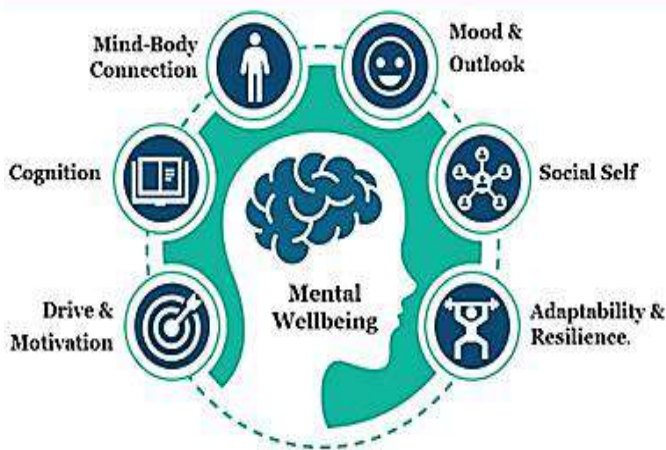
- The Tele-MANAS platform enables users to access mental health support **anytime and anywhere**, improving outreach, especially in underserved areas.
- Recent improvements focus on:
 - ✓ **Multilingual support**, making services accessible in several regional languages in addition to Hindi and English.
 - ✓ **Accessibility features** to improve usability for persons with disabilities, including the visually impaired.

- ✓ **Chatbot-based assistance**, aimed at providing information, guidance, and navigation support.
- ✓ **Emergency response mechanisms** to offer quick guidance during mental health crises.

Awareness and Outreach

- The government emphasised the importance of **public awareness, stigma reduction, and early intervention** in mental health.
- Use of public figures and campaigns has been encouraged to **normalise conversations around mental health** and promote help-seeking behaviour.

Chart XI.9.a: Mental wellbeing



World Mental Health Day

About

- **World Mental Health Day** is observed every year on **10 October**.
- It is led by the **World Health Organization (WHO)** to:
 - ✓ Raise global awareness about mental health issues
 - ✓ Promote mental well-being
 - ✓ Encourage action to make mental health care accessible and affordable for all

Theme:

- Each year, WHO announces a theme focusing on emerging or critical mental health challenges, often highlighting **access to care, equity, and support during crises and emergencies**.

EDUCATION - MEANS OF TRIBAL EMPOWERMENT

Why in News: Recently, President **Droupadi Murmu** interacted with members of the **Siddi community**, a **Particularly Vulnerable Tribal Group (PVTG)**, in Gujarat's **Junagadh district**.

Key Details

- President emphasised **education as a key instrument of empowerment**, noting the community's literacy rate of **over 72%**

About the Siddi Community

- The **Siddi tribe** is of **African origin** and is mainly found in **Gujarat, Karnataka, Telangana, and Andhra Pradesh**.
- They are categorised as a **PVTG** due to social isolation, economic backwardness, and limited access to development opportunities.

Importance of Education for Tribal Communities

- **Social and Economic Empowerment**
 - ✓ Education enhances **employability, skill development, and income generation**, enabling tribal youth to access better livelihood opportunities.
 - ✓ It also promotes **social mobility and dignity**, helping communities overcome historical marginalisation.
- **Awareness of Rights and Schemes**
 - ✓ Education improves awareness about **constitutional rights, welfare schemes, and legal safeguards** available to tribal communities.
 - ✓ Informed citizens ensure better utilisation of schemes like **PM-JANMAN, EMRS, and Van Dhan Yojana**, strengthening inclusive growth.
- **PVTGs and Government Interventions**
 - ✓ India has **75 Particularly Vulnerable Tribal Groups**, identified for focused and targeted development efforts.
 - ✓ Government initiatives such as the **Pradhan Mantri PVTG Development Mission** and **scholarship schemes for ST students** aim to bridge developmental gaps.
- **Tribal Communities and Sustainable Living**
 - ✓ Tribal communities follow **nature-friendly lifestyles**, relying on traditional knowledge systems that promote environmental conservation.
 - ✓ These practices support **sustainable development**, biodiversity protection, and climate resilience, aligning with national and global goals.
- **Constitutional and Developmental Vision**
 - ✓ The Constitution mandates the promotion of tribal welfare under **Article 46**, along with special protections under the **Fifth and Sixth Schedules**.

- ✓ President Murmu highlighted that ensuring equality, **justice, and protection of tribal rights** is essential for achieving **Developed India @2047**.

Way Forward

- Strengthening **education infrastructure**, especially in remote tribal areas, is necessary to reduce dropout rates and learning gaps.
- Enhancing **last-mile delivery of welfare schemes** and encouraging **community participation** will ensure sustainable and inclusive development.

Conclusion

World Mental Health Day underscores the growing recognition of mental health as a core component of public health and human development. Initiatives such as Tele-MANAS reflect India's commitment to expanding equitable, affordable, and technology-enabled mental healthcare, particularly for vulnerable and underserved populations. Strengthening awareness, accessibility, and institutional capacity in mental health services is essential not only for individual well-being but also for building a resilient, inclusive, and productive society aligned with the goals of sustainable development.

CHILDREN IN INDIA REPORT

Why in News: The Ministry of Statistics and Programme Implementation (MoSPI) has released the latest edition of the Children in India report, which presents key indicators related to the status and well-being of children in the country.

About the Report

- The Children in India report is a **statistical compilation** based on official data sources such as SRS, NFHS, and administrative records.
- It provides evidence on **education, health, nutrition, protection, and demographic trends** related to children, aimed at supporting **evidence-based policymaking** and monitoring child-centric outcomes.

Key Highlights

Health and Demographic Indicators

- **Infant Mortality Rate (IMR):** Declined significantly over the last decade, reflecting improvements in maternal and child healthcare. IMR refers to the number of deaths of infants below one year of age per 1,000 live births in a given year.

- **Under-Five Mortality Rate (U5MR):** Recorded a marginal decline in the latest year, indicating continued progress in child survival. U5MR measures the probability of a child dying before reaching five years of age per 1,000 live births.
- **Birth Rate:** Continued its declining trend, with **rural areas recording higher birth rates than urban areas**, consistent with India's demographic transition.

Education Outcomes

- **School Dropout Rates:** Dropout levels have declined across:
 - ✓ **Preparatory stage**
 - ✓ **Middle level**
 - ✓ **Secondary level**
 - This indicates better **retention in school education**, aligned with NEP 2020 objectives.
- **Gender Parity Index (GPI):** Near parity has been achieved across different stages of school education, reflecting improved **female participation and access to education**.

Social Protection Indicators

- **Child Marriage:** The proportion of women aged 20–24 years who were married before the age of 18 has shown a **declining trend**, though the prevalence remains a concern.
- **Adoption Trends:**
 - ✓ Total number of adoptions has increased in recent years.
 - ✓ **In-country adoptions constitute the majority**, while inter-country adoptions form a smaller share, regulated under existing legal frameworks.

Significance

- Highlights India's **progress in child health, education, and social protection**, while also underlining persisting challenges.
- Supports monitoring of **SDG-3 (Good Health), SDG-4 (Education), and SDG-5 (Gender Equality)**.
- Provides a data foundation for targeted interventions under schemes such as **POSHAN Abhiyaan, Samagra Shiksha, and Beti Bachao Beti Padhao**.

Conclusion

The Children in India report reflects steady improvements in child-related indicators, driven by policy interventions and

social awareness. However, issues such as child marriage, regional disparities, and adolescent well-being require sustained policy attention to ensure inclusive and equitable development.

STATE OF SOCIAL JUSTICE

Why in News: Recently, the International Labour Organization (ILO) released a report titled '**The state of social justice: A work in progress**'.

Key Details

- The report has been released ahead of the **Second World Summit for Social Development in Doha** (November, 2025) that marks 30 years of the landmark **1995 Copenhagen Summit on Social Development held in Denmark**.
- ✓ The summit adopted the **Copenhagen Declaration on Social Development** and the **Copenhagen Programme of Action**.

Four foundational pillars of Social Justice



Fundamental human rights and capabilities
(Ensuring basic freedoms and entitlements are realized)



Equal access to opportunities (Removing impediments in education, training, and work to enable decent living)



Fair distribution
(Guaranteeing a just share of economic growth benefits, particularly for the most disadvantaged)



Fair transitions
(Managing major structural societal shifts (environmental, digital, demographic) justly)

Key terms

- ✓ **Extreme Poverty:** According to World Bank, the people in extreme poverty are who live on less than \$3 per day.
- ✓ **Working Poverty:** The working poor are employed but lives in households whose income falls below the poverty line.
- ✓ **Living Wage:** It is the wage level that is necessary to afford a decent standard of living.

Key Achievements in social Justice

- **Decline in Extreme Poverty:** From 39% (1995) to 10% (2025) while working poverty dropped from 28% to 7%.
- **Increased Social Protection Coverage:** For the **first time in history**, more than half the world's population is covered by at least one **social protection scheme**.
- **Reduced Gender gap in Labour Force Participation:** From 26% to 24% points from 2005 to 2025.
- **Decline in Inequality:** Inequality between countries has been falling since the early 2000s, due to **rising worker productivity** in middle-income countries.

✓ These documents outlined **ten key commitments** e.g., Eradicating poverty, achieving full and productive employment, Promoting social integration and Equality between men and women etc.

- The 2025 report provides an extensive **overview of the state of social justice globally**, examining progress and persistent challenges across several key pillars.

What is Social Justice?

- It means that "all human beings, irrespective of **race, caste, creed or sex**, have the **right to pursue** both their **material well-being** and their **spiritual development** in conditions of freedom and dignity, of economic security and equal opportunity".
- It helps build **trust**, enhances **legitimacy** and **unlocks productive potential** for sustained inclusive growth, peace and stability.

- **Child Labour:** Declined from 20.6% in 1995 to 7.8% in 2024.

Key Achievements in Social Justice in India:

- **Extreme Poverty:** Fell sharply from 16.2% in 2011-12 to just 2.3% in 2022-23.
- **Female Labour Force participation:** Rose significantly in 2024, with the rate increasing to 41.7 % in 2023-24 from 23.3 % in 2017-18.
- **Increased Social Protection Coverage:** India's social security coverage has increased from 19% in 2015 to 64.3% in 2025.
- **Decline in Inequality:** India ranks **fourth globally** after the Slovak Republic, Slovenia and Belarus in income equality with a **Gini score of 25.5**.
- **Access to basic services:** E.g. Jal Jeevan Mission (JJM) has significantly increased rural household access to tap water, with over 15.72 crore households now connected.

Key Concerns to Achieve Social Justice in recent times:

- **Challenges related to Fundamental human rights:**
 - ✓ **Wage Gap:** In 2025, the earnings ratio between men and women is 78%.
 - At the current rate, the wage gap will take 50–100 years to close.
 - ✓ **Child Labour:** 138 million children aged 5–17 is child labour, with almost 50% engaged in hazardous labour.
 - ✓ **Forced Labour:** People in **forced labour** from 2016 to 2021 have risen from 24.9 million to 27.6 million.
- **Challenges related to Equal access to opportunities:**
 - ✓ **Inequality:** The top 1% of people still controls 20% of income and 38% of wealth.
 - ✓ **Informal employment:** It accounts for approximately 58 % of total employment.
 - ✓ **Accessibility to basic Services:** E.g., 1 in 4 lacks access to clean water
- **Challenges related to Fair transitions:**
 - ✓ **Environmental transition:** Measures needed to limit global warming to a maximum of 2°C may lead to job losses of around 6 million (Primarily in fossil fuel sector).
 - ✓ **Digital transition:** The **latest ILO research** indicates that around **one in four jobs** will likely be transformed by generative AI.
 - ✓ **Demographic transition:** In labour markets, improving productivity and access to decent jobs (**In most low- and upper-middle-income countries**) remain paramount as well as addressing needs of an ageing workforce (**In high- and upper-middle-income countries**).

Key Initiatives for Social Justice

- **Global:**
 - ✓ **Global Coalition for Social Justice:** Launched by the ILO in 2023, this initiative unites governments, worker and employer organizations, and other partners for social justice.
 - ✓ **Decent Work Agenda:** ILO's Decent Work Agenda promotes opportunities for all people to obtain productive work with fair income, security, and social protection.
 - ✓ **ILO Declaration on Social Justice for a Fair Globalization:** Adopted in 2008, this declaration

places the Decent Work Agenda at centre of ILO's policies.

- ✓ **Universal Declaration of Human Rights (1948):** Sets out the fundamental human rights that every person is entitled to.
- ✓ **Other Initiatives:** The International Covenant on Economic, Social and Cultural Rights (1966), Global Alliance against Hunger and Poverty (G20), Sustainable Development Goals (SDGs) etc.
- **India**
 - ✓ **Constitutional Measures:** E.g., **Preamble** ensures **social, economic, and political justice**, Fundamental Rights (E.g. Article 23), Directive Principles of State Policy (Article 38), etc.
 - ✓ **Legislative Measures:** E.g., Protection of Civil Rights Act, 1955, Rights of Persons with Disabilities Act, 2016, SC and ST (Prevention of Atrocities) Act, 1989 etc.
 - ✓ **Institutional Measures:** E.g., National Commission for Scheduled Castes (NCSC), National Commission for Women (NCW), etc.
 - ✓ **Welfare Measures:** E.g., PM Awas Yojana, Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (PM-JAY), etc.

Way Forward

- **Fair distribution**
 - ✓ Effective recognition of the right to **collective bargaining**, update **minimum wage policies** and **operationalize a living wage** through a wage-setting process in line with ILO principles.
 - ✓ Increase the efficacy of **non-discrimination policies** and enhance the sustainability, coverage and adequacy of **social protection systems**.
- **Equal access to opportunities**
 - ✓ Strengthen **Active labour market policies (ALMPs)**, including training and labour intermediation.
 - ✓ Support **sustainable enterprise measures** and **offer formalization pathways** for micro- and small enterprises.
 - ✓ The government shall provide employment subsidies, such as wage subsidies and hiring incentives.
 - ✓ Implement well-designed **public employment programmes**. E.g., India's Mahatma Gandhi National Rural Employment Guarantee Act (NREGA).

- **Fair Transition**

- ✓ Adopt **place-based strategies**, such as investing in renewable energies in geographic areas where other energy production has been reduced.
- ✓ Need for policies like **partial retirement and anti-age discrimination laws** to retain older workers and support economic participation.
- ✓ Expansion in the provisions of **paid leave** to care for ageing family members.

Conclusion

Despite notable gains in poverty reduction, education, and gender inclusion, social justice remains an unfinished agenda. To sustain progress, nations must focus on reducing structural inequalities, expanding social protection, and ensuring that economic growth translates into dignity and opportunity for all.

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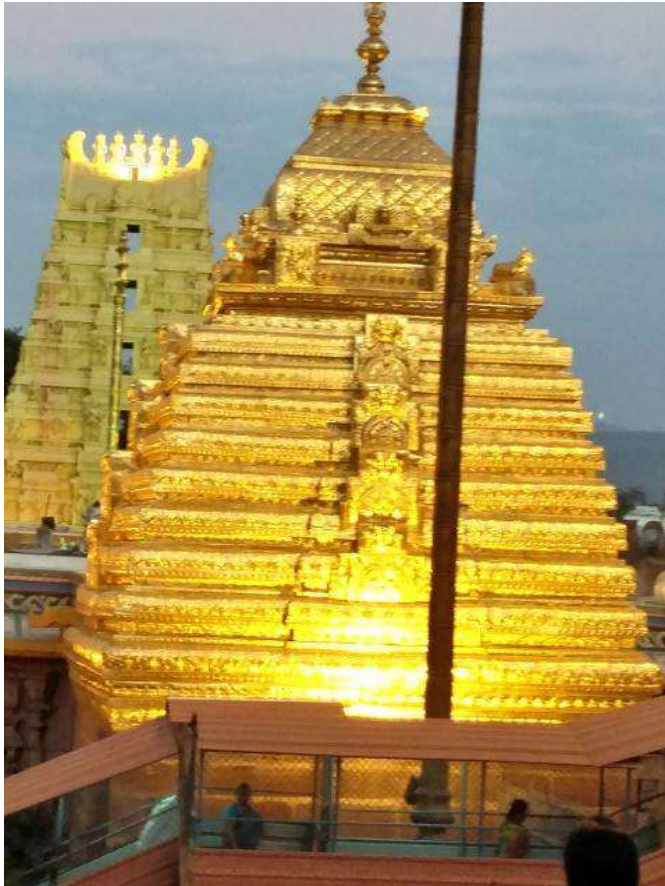
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HISTORY & CULTURE

SRISAILAM TEMPLE

Why in News: Recently, the Prime Minister of India visited and offered prayers at the **Sri Bhramaramba Mallikarjuna Swamy Temple** at Srisailam in **Andhra Pradesh**.

About Srisailam Temple



- **Sri Bhramaramba Mallikarjuna Swamy Devasthanam**, commonly known as **Srisailam Temple**, is a prominent **Hindu pilgrimage centre dedicated to Lord Shiva**.
- It is located in the **Nallamala Hills**, on the banks of the **Krishna River**, amidst dense forest cover, giving it both **spiritual and ecological significance**.
- The temple is unique as it represents a **rare confluence of Shaivism and Shaktism**, being:
 - ✓ One of the **12 Jyotirlingas of Lord Shiva**, and
 - ✓ One of the **18 Shakti Peethas of Goddess Parvati**.

Historical Background

- Epigraphic and literary evidence suggests that the temple site was active during the **Satavahana period (around 2nd century CE)**.

- Over the centuries, the temple received patronage from several dynasties, including:
 - ✓ **Chalukyas**
 - ✓ **Kakatiyas**
 - ✓ **Vijayanagara rulers**
 - ✓ **Qutb Shahis**
- These rulers contributed to the **expansion, renovation, and architectural embellishment** of the temple complex.

Architectural Features

- The temple is built predominantly in the **Dravidian style of architecture**.
- Key features include:
 - ✓ Tall **gopurams**
 - ✓ Spacious **prakarams**
 - ✓ Elaborately sculpted **mandapas**
- The **Mukha Mandapa**, added during the **Vijayanagara period**, is one of the most impressive halls of the temple, noted for its scale and ornamentation.

Religious Significance

- According to Hindu tradition:
 - ✓ **Lord Shiva** manifested here as **Mallikarjuna**.
 - ✓ **Goddess Parvati** manifested as **Bhramaramba**.
- The presence of both a **Jyotirlinga** and a **Shakti Peetha** at **one site** symbolises the **inseparable cosmic unity of Shiva and Shakti**.
- Consequently, the temple attracts devotees from both **Shaiva and Shakta traditions**.

Cultural and Spiritual Heritage

- Srisailam has long been regarded as a **centre of spiritual learning and religious discourse**.
- According to tradition, **Adi Shankaracharya** visited Srisailam and is associated with the composition of the **Shivananda Lahari**, a devotional hymn dedicated to Lord Shiva.
- Today, the temple continues to be a major pilgrimage destination, preserving the **religious, architectural, and cultural heritage of South India**.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to the Srisailam Temple, consider the following statements:

1. It is one of the twelve Jyotirlinga shrines dedicated to Lord Shiva.
2. It is also recognised as one of the eighteen Shakti Peethas associated with Goddess Parvati.
3. The main temple structure was originally constructed during the Gupta period.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Answer: (b)

UNESCO VIRTUAL MUSEUM

Why in News: UNESCO recently launched the **Virtual Museum of Stolen Cultural Objects** at the **MONDIACULT 2025 Conference in Spain**. This innovative digital platform aims to document looted heritage, combat illicit trafficking of cultural artifacts, and facilitate restitution to source communities.

About the Virtual Museum



- It is the **first global online museum** dedicated to tracking, displaying, and documenting stolen, looted, or illegally trafficked cultural objects.
- Developed in collaboration with **INTERPOL** and other partners, it uses **digital technologies, AI, and 3D modelling** to recreate artifacts that are otherwise lost or inaccessible.
- Currently, the platform features around **240 stolen artifacts from 46 countries**, accessible virtually for public education and research.

Objectives

- **Tackle Illicit Trafficking:** Maintain a transparent, traceable record to facilitate recovery and deter illegal trade.
- **Cultural Reconnection:** Re-establish ties with source communities via **virtual repatriation**.
- **Educational Use:** Raise awareness about heritage protection, museum ethics, and the colonial histories of artifact acquisition.

Key Features

- **Interactive Design:** The museum is designed as a **baobab tree**, symbolizing endurance and wisdom (architect: Francis Kéré).
- **Gallery of Stolen Culture:** Digital reconstructions of stolen objects.
- **Return & Restitution Room:** Showcases successful repatriation cases.
- **Auditorium:** Hosts expert debates, workshops, and awareness sessions.
- **AI & 3D Modelling:** Allows users to study objects even without original records.
- **Dynamic Platform:** The museum is intended to “empty itself slowly” as real-world restitutions occur.

Representation from India

- India is represented by **two 9th-century sandstone sculptures of Nataraja and Brahma** from the Mahadev Temple, Pali (Chhattisgarh).
- These artifacts reflect India’s **rich temple art heritage** and highlight the impact of colonial plunder.

Significance

- Acts as a **moral and symbolic acknowledgment of justice** and reconciliation.
- Introduces **virtual repatriation** as a way to reconnect communities with their heritage.
- Encourages public understanding of the **ethical, technological, and cultural dimensions** of artifact restitution.
- Represents a **global model** for leveraging technology in cultural diplomacy and heritage protection.

Conclusion

The **UNESCO Virtual Museum** is a pioneering step in world heritage protection, combining **technology, diplomacy, and**

education to advance cultural justice, foster awareness, and support ethical restitution in the digital age.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. Consider the following statements regarding the UNESCO Virtual Museum of Stolen Cultural Objects:

1. It was launched at the MONDIACULT 2025 Conference in Spain.
2. Instead of physically returning looted artifacts, it seeks to make them a permanent part of a virtual exhibition.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (c)

SOMNATH TEMPLE

Why in News: The President of India recently visited Gujarat and offered prayers at the historic **Somnath Mahadev Temple** in Gir Somnath district, highlighting its importance as a **spiritual, cultural, and heritage landmark**.

Historic Importance



- Located at **Prabhas Patan near Veraval in Saurashtra, Gujarat**, it is considered the **first Jyotirlinga of Lord Shiva**.
- Situated at a **Triveni Sangam** of three rivers: **Kapila, Hiran, and Saraswati**.
- Temple is said to be over **2,000 years old**, with references in written records as early as **649 CE**.
- Ancient myths attribute the original constructions to legendary figures: Moon God (gold), Ravana (silver), Krishna (wood), Bhimdev (stone).

Construction and Reconstruction Timeline

- ✓ **649 CE:** Second temple by King Maitre of Vallabhini.
- ✓ **725 CE:** Plundered by ruler of Sindh.
- ✓ **815 CE:** Third temple by King Nag Bhatt II (red sandstone).
- ✓ **1026 CE:** Destroyed by Mahmud of Ghazni.
- ✓ **1026–1042 CE:** Renovated by Solanki King Bhimdev I.
- ✓ **1169 CE:** Restored by Kumarapala (Chalukya-Solanki dynasty).
- ✓ **1299 CE:** Sacked by Ulugh Khan (Delhi Sultanate).
- ✓ **1308 CE:** Rebuilt by Mahipala I (Chudasama dynasty); lingam re-established by Khengara.
- ✓ **1395 CE:** Invaded by Zafar Khan (Gujarat Sultanate).
- ✓ **1451 CE:** Sacked by Sultan Mahmud Begada.
- ✓ **1706 CE:** Destroyed by Aurangzeb.
- ✓ **1782 CE:** Small temple restored by Ahilyabai Holkar (Old Somnath).
- ✓ **1951 CE:** Present temple built in **Māru-Gurjara (Chalukya) style** post-independence, following Sardar Vallabhbhai Patel's initiative.

Architectural Significance

- Reconstructed in **Māru-Gurjara (Chalukya/Solanki) style**.
- Features include:
 - ✓ **Delicate carvings** on pillars
 - ✓ **Large spire (Shikhara)**
 - ✓ Intricate **stonework and sculptures**

NINGOL CHAKOUBA FESTIVAL

Why in News: The Manipur government organises a fish fair ahead of the Ningol Chakouba festival, targeting the sale of **1.5 lakh kg of various fish varieties**, as part of local cultural and economic promotion.

About the Festival



- **Annual Celebration:** Ningol Chakouba is celebrated every year in Manipur on the **second day of the lunar month of Hiyangei** of the **Meitei calendar**.

- **Primary Community:** It is mainly celebrated by the **Meiteis**, though participation from other communities has increased in recent times.
- **Objective:** The festival emphasises **family reunion, happiness, and social harmony.**
- **Nomenclature:**
 - ✓ Ningol = married woman
 - ✓ Chakouba = invitation for a feast
 - The festival involves **inviting married daughters/sisters to their parental homes** for a grand feast and celebration.
- **Uniqueness:** Married sisters visit their **maternal homes**, participate in feasting, exchange gifts, and strengthen family bonds.

About the Meitei Community

- **Ethnicity:** The Meiteis are the **predominant ethnic group in Manipur.**
- **Language:** They speak **Meitei (Manipuri)**, which is:
 - ✓ One of India's **22 official languages**
 - ✓ The **sole official language of Manipur**
- **Distribution:**
 - ✓ Primarily settled in the **Imphal Valley**
 - ✓ Present in **Assam, Tripura, Nagaland, Meghalaya, Mizoram,** and neighbouring **Myanmar and Bangladesh**
- **Social Structure:** Divided into **clans**, which follow **exogamy (no intermarriage within the same clan)**
- **Economy:** **Rice cultivation in irrigated fields** forms the economic backbone of the Meitei community.

Significance

- **Culture & Heritage:** Highlights the **rich cultural traditions of North-East India.**
- **Social Harmony:** Emphasises **family ties, social cohesion, and community participation.**
- **Regional Economy:** Festivals often link with **local economy, trade, and livelihood**, e.g., fish fairs.

KAMBALA

Why in News: The **Karnataka High Court** recently dismissed most aspects of a petition filed by **People for the Ethical Treatment of Animals (PETA)** challenging the conduct of the

Kambala buffalo race outside Udupi and Dakshina Kannada districts.

About Kambala



- **Nature:** Kambala is a traditional **buffalo race** conducted in **slushy paddy fields**, typically in **coastal Karnataka (Udupi and Dakshina Kannada)** between **November and March.**
- **Cultural Roots:** Traditionally sponsored by **Tuluva households and local landlords**, the race is associated with the **Tuluva community**, native speakers of the **Tulu language** in southern Karnataka.
- **Objective & Practice:** During the race, jockeys run behind buffaloes, controlling them by **holding reins tightly and whipping lightly** to encourage speed.
- **Tradition:** Historically, Kambala was **non-competitive**, with buffalo pairs racing sequentially. It also served as a **thanksgiving ritual to gods**, seeking protection of livestock from diseases.
- **Concerns:** Animal rights activists argue that Kambala subjects buffaloes to **unnecessary pain and cruelty**, violating the **Prevention of Cruelty to Animals (PCA) Act, 1960.** They contend that racing is **not physiologically suitable** for buffaloes and constitutes animal cruelty.

About PETA

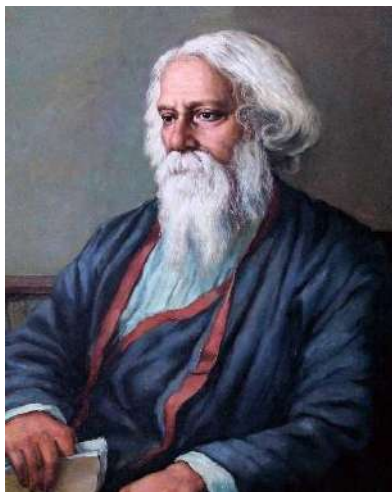
- **Nature:** PETA is a **global non-governmental organization (NGO)** dedicated to preventing **abuse and exploitation of animals** across industries and society.
- **Foundation:** Established in **1980** by **Ingrid Newkirk** and **Alex Pacheco**, inspired by Peter Singer's **Animal Liberation (1975).**
- **Headquarters:** Based in **Norfolk, Virginia, USA**, with entities worldwide, it is the **largest animal rights organization globally.**

- **Objective:** PETA opposes **speciesism** (human-supremacist worldview) and focuses on areas where animals suffer the most:
 - ✓ Laboratories
 - ✓ Food industry
 - ✓ Clothing trade
 - ✓ Entertainment and sports
- **Working Mechanism:** The organization operates via **public education, investigations, research, legislation, protests, and negotiations** with companies and regulators to promote animal welfare.

RABINDRANATH TAGORE

Why in News: The Odisha government has announced plans to restore **'Pather Puri'**, the residence of Nobel laureate Rabindranath Tagore in Puri, and transform it into a museum to preserve his legacy and promote cultural tourism.

About Rabindranath Tagore



- **Background**
 - ✓ Born in 1861, he was the youngest of 13 children of **Debendranath Tagore**, a leading figure in the Brahmo Samaj, and **Sarada Devi**.
 - ✓ He received early education at home, with a strong emphasis on **literary and cultural learning**.
- **Schooling and Higher Education**
 - ✓ Attended multiple schools and had a brief stint at **University College London**, though he did not complete formal higher education.
- **Multi-faceted Personality**
 - ✓ Bengali **poet, novelist, musician, painter, philosopher, and educationist**.
 - ✓ Played a key role in introducing **Indian culture to the West**.

- ✓ Recognized as a **polymath** who reshaped literature, music, and education in Bengal and India.

- **Sobriquets**
 - ✓ Known as **'Gurudev', 'Kabiguru', and 'Biswakabi'**.
- **Association with Mahatma Gandhi**
 - ✓ Close friend of **Mahatma Gandhi** and credited with giving him the title **"Mahatma"**.
- **Votary of National Integration**
 - ✓ Advocated **unity in diversity** as essential for India's national integration.
- **World Parliament of Religions**
 - ✓ Delivered speeches at the **World Parliament of Religions** in 1929 and 1937, promoting interfaith harmony.

Contribution to Education

- Established **Visva-Bharati University** in 1921 at Santiniketan, emphasizing **experiential, liberal, and holistic education** that challenged conventional schooling methods.

Contributions as a Poet and Musician

- Composed over **2,000 songs**, collectively known as **'Rabindra Sangeet'**, blending lyrical beauty with fluid musical expression.
- Modernized **Bengali prose and poetry**; notable works include:
 - ✓ Gitanjali (collection of poems, Nobel-winning work)
 - ✓ Ghare-Baire, Gora, Manasi, Balaka, Sonar Tori
 - ✓ **Famous song:** Ekla Chalo Re
- Published his first poems at age 16 under the pen-name **'Bhanusimha'**.
- Authored the **national anthems of India (Jana Gana Mana) and Bangladesh (Amar Sonar Bangla)**, and inspired the anthem of Sri Lanka through his students.

Awards and Honours

- **Nobel Prize in Literature (1913)** for Gitanjali first non-European recipient.
- **Knighthood (1915)** from British King George V; **renounced in 1919** following the **Jallianwala Bagh massacre**.

Significance

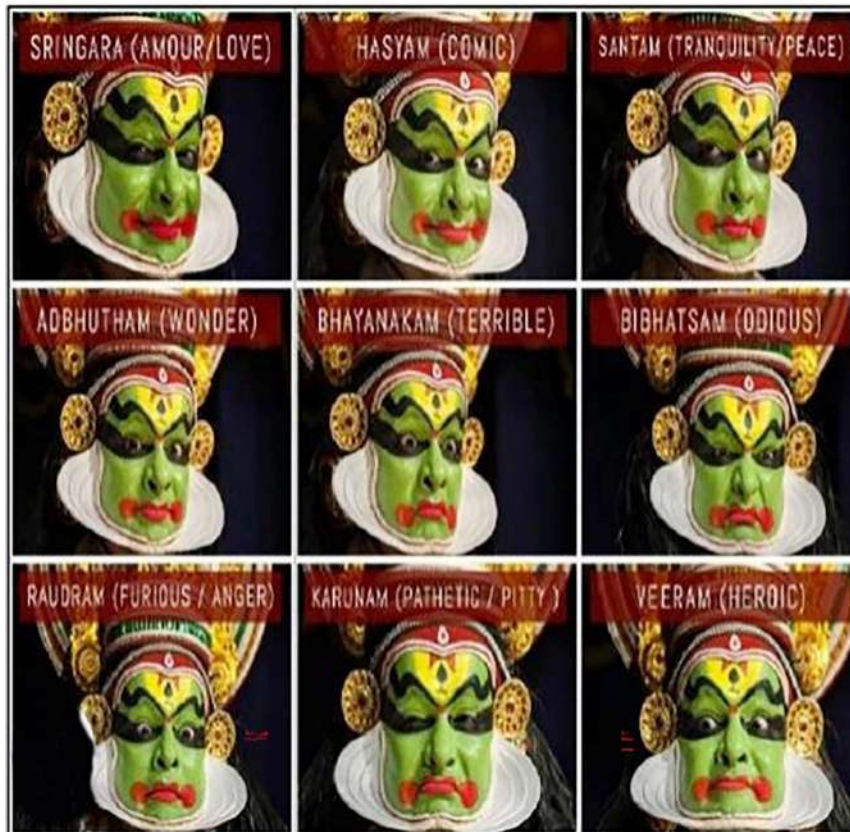
- Tagore's works reflect **literary excellence, humanism, and universalism**.
- He remains a symbol of **India's cultural renaissance**, promotion of **interfaith harmony**, and **educational innovation**.

KATHAKALI

Why in News: Kerala Kalamandalam, Cheruthuruthy, recently witnessed history when **16-year-old Sabri became the first Muslim girl to perform Kathakali** at this prestigious institution since its founding in 1930.

About Kathakali

- **Origin:** Kathakali emerged in the **17th century in the kingdom of Travancore** (present-day Kerala). Initially performed in **temple precincts**, it later gained popularity in **royal courts**.



- **Dance Features:**
 - ✓ Integrates the **four aspects of abhinaya**:
 - Angika (body movements),
 - Aharya (costume and makeup),
 - Vachika (speech or song),
 - Satvika (mental/emotional expression).
 - ✓ Incorporates **Nritta** (pure dance), **Nritya** (expressive dance), and **Natya** (dramatic enactment).
- **Music:** Follows **sopana sangeet**, Kerala's traditional temple music style, historically associated with **ritual singing of Ashtapadis** along temple steps.
- **Mudras and Expressions:**
 - ✓ Highly stylized movements, intricate footwork, and detailed **hand gestures (mudras)**.
 - ✓ **Facial expressions (rasas)** convey emotions, enhancing the storytelling aspect.
- **Historical Challenges:** Kathakali faced near **extinction in the early 20th century**.
- **Revival Efforts:**
 - ✓ Initiatives by **Poet Vallathol Narayana Menon** and **Manakkulam Mukunda Raja** led to the establishment of **Kerala Kalamandalam**, a centre of excellence for classical art forms, securing Kathakali's revival.
- **Major Exponents:**
 - ✓ **Kavungal Chathunni Panicker**
 - ✓ **Kalamandalam Gopi**

GOVERNMENT SCHEMES

VIKSIT BHARAT BUILDATHON

Why in News: In line with the **Viksit Bharat @2047 vision** and the **National Education Policy (NEP) 2020**, the Government of India has been promoting **student-led innovation and experiential learning** through various initiatives of the **Ministry of Education, Atal Innovation Mission (AIM), NITI Aayog, and AICTE**. A proposed national-level **Buildathon for school students**, referred to as **Viksit Bharat Buildathon**, aims to strengthen this innovation ecosystem.

Key Features

- The initiative is **envisaged as a national-level innovation and problem-solving platform for school students**, particularly from **Classes VI to XII**, in line with the Atal Tinkering Labs (ATL) framework.
- It seeks to promote **maker culture, design thinking, creativity, and experiential learning** among students.
- The Buildathon aims to **bridge classroom learning with real-life problem solving**, encouraging students to develop concepts, prototypes, or working models.
- The initiative is aligned with the **National Education Policy (NEP) 2020**, which emphasises:
 - ✓ Critical thinking
 - ✓ Creativity
 - ✓ Interdisciplinary learning
 - ✓ Experiential and vocational education
- Special emphasis is proposed on **inclusive participation**, particularly from **aspirational districts, tribal regions, and underserved areas**, to democratise access to innovation opportunities.
- Student submissions may be evaluated by expert panels based on **originality, feasibility, innovation, and potential social impact**.
- Selected students are expected to receive **mentorship, incubation support, and industry exposure**, consistent with existing AIM and AICTE practices.

Broad Thematic Orientation (Indicative)

The initiative broadly resonates with national priorities such as:

- **Atmanirbhar Bharat** – encouraging indigenous problem-solving and innovation
- **Vocal for Local** – supporting locally relevant solutions
- **Integration of traditional knowledge with modern science**
- **Inclusive and sustainable development**, in line with Viksit Bharat @2047

Significance

- **Strengthening NEP 2020 Implementation:** Translates policy intent into practice by embedding innovation and experiential learning at the school level.
- **Promoting Grassroots Innovation:** Encourages students to address local challenges such as waste management, clean energy, water conservation, and sustainable agriculture.
- **Reducing Rural–Urban Innovation Divide:** Focus on aspirational and remote regions helps uncover and nurture hidden talent.
- **Industry–Education Linkages:** Mentorship and incubation support improve employability and innovation readiness.

Way Forward

- **Capacity Building of Teachers and Mentors:** Regular training in design thinking and innovation pedagogy.
- **Improving Digital Infrastructure:** Strengthening ICT facilities in rural and tribal schools.
- **Stronger Industry and Startup Linkages:** Collaboration with universities, startups, and industry bodies for scaling innovations.
- **Institutional Support for Patents and Incubation:** Dedicated facilitation cells to assist in patent filing and prototype development.

Conclusion

A national-level school innovation initiative aligned with **NEP 2020** and **Viksit Bharat @2047** can play a transformative role in nurturing **future-ready, innovative, and socially conscious citizens**, thereby strengthening India's long-term developmental trajectory.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to school-level innovation initiatives aligned with Viksit Bharat @2047, consider the following statements:

1. Such initiatives are aligned with the objectives of the National Education Policy (NEP) 2020, which emphasises experiential learning and creativity.
2. The Atal Innovation Mission supports school students primarily through innovation and tinkering-based learning frameworks.
3. These initiatives aim to bridge classroom education with real-life problem solving.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (d)

FARE SE FURSAT

Why in News: The Ministry of Civil Aviation has introduced “Fare Se Fursat”, a **fixed airfare pilot initiative** on select routes operated by **Alliance Air**, with the objective of improving **affordability, predictability, and accessibility** of air travel, particularly for passengers from **Tier-2 and Tier-3 cities**.

Key Features

- **Fixed Fare Mechanism:** Under the scheme, airfares on selected routes remain **constant**, irrespective of the time of booking, thereby reducing price volatility associated with dynamic pricing.
- **Pilot Implementation:** The initiative is being implemented as a **pilot project on select regional routes** for a limited period to assess **operational feasibility, passenger response, and revenue implications** before any wider rollout.
- **Passenger-Centric Approach:** By reducing last-minute fare surges, the scheme aims to bring **greater transparency and predictability** to ticket pricing.
- **Support to Regional Connectivity:** The initiative complements the government’s efforts to improve connectivity to **underserved and unserved airports**, in line with the objectives of the **UDAN (Ude Desh ka Aam Nagrik)** scheme.

Significance

- **Affordability:** Addresses the issue of steep fare increases, particularly affecting middle- and lower-income passengers.
- **Accessibility:** Encourages first-time flyers and residents of smaller towns to opt for air travel.
- **Predictability in Travel Planning:** Fixed fares help passengers plan journeys without uncertainty regarding ticket prices.
- **Simplification of Pricing Structure:** Reduces dependence on complex dynamic pricing mechanisms, making fares easier to understand.
- **Social Inclusion:** Reinforces the vision of making air travel accessible to wider sections of society.
- **Alignment with UDAN:** Strengthens the broader objective of affordable regional air connectivity initiated in 2017.

Key Context: Indian Aviation Sector

- **Global Position:** India is the **third-largest domestic aviation market** globally.
- **Passenger Growth (FY23):**
 - ✓ Domestic passengers: ~306 million
 - ✓ International passengers: ~69 million
- **Infrastructure Expansion:**
 - ✓ Number of operational airports increased significantly since 2014.
 - ✓ Long-term plans aim to expand airport infrastructure in line with **Viksit Bharat @2047**.

Conclusion

The Fare Se Fursat initiative reflects the government’s effort to balance **commercial viability with public interest** in the aviation sector. By promoting predictable and affordable fares on regional routes, it supports inclusive growth and strengthens India’s regional air connectivity framework.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. ‘Fare Se Fursat’, recently seen in the news, is related to:

- (a) Taxi fare regulation
- (b) Aviation sector
- (c) Railway fare reforms
- (d) Urban transport subsidies

Answer: (b)

PRIME MINISTER DHAN-DHAANYA KRISHI YOJANA

Why in News: Recently, the Union Government announced the **Prime Minister Dhan-Dhaanya Krishi Yojana**, a proposed agriculture-focused initiative aimed at improving productivity and rural prosperity through a multi-sectoral approach.

Key Features

- The programme draws conceptual inspiration from the **Aspirational Districts Programme**, which focuses on outcome-based development in backward regions.
- It envisages a **comprehensive “Rural Prosperity and Resilience” framework**, to be implemented in partnership with State governments.
- The scheme proposes **convergence of existing central and state schemes** along with targeted interventions.



Significance

- **Addressing Underemployment:** By strengthening farm and allied activities, the scheme seeks to reduce disguised unemployment in agriculture and improve rural incomes.
- **Reducing Distress Migration:** By creating economic opportunities in rural areas, the programme aims to make migration a choice rather than a compulsion.
- **Inclusive Rural Development:** Special emphasis is placed on:
 - ✓ **Rural women** – through enterprise development, employment opportunities, and financial inclusion.

- It is intended to focus on **districts characterised by low agricultural productivity, moderate crop intensity, and limited access to institutional credit.**

Objectives

- To **enhance agricultural productivity** through improved inputs, technology, and practices.
- To promote **crop diversification and sustainable agriculture**, reducing overdependence on water-intensive crops.
- To strengthen **post-harvest infrastructure**, including storage facilities at block and panchayat levels.
- To improve **irrigation efficiency and coverage**.
- To facilitate access to **both short-term and long-term institutional credit** for farmers.
- The programme aims to benefit a large number of farmers, particularly small and marginal cultivators.

- ✓ **Young farmers and rural youth** – by encouraging agri-entrepreneurship, skill development, and value-addition activities.
- ✓ **Small and marginal farmers** – by improving access to credit, infrastructure, and markets.

Way Forward

- **Strengthening Centre-State Coordination:** Effective implementation requires cooperative federalism, with States given flexibility to design district-specific interventions while aligning with national objectives and outcome indicators.

- **Convergence of Existing Schemes:** Meaningful integration with schemes such as PMKSY, PMFBY, KCC, e-NAM, and NMSA will avoid duplication, improve resource efficiency, and enhance impact at the grassroots level.
- **Enhancing Agricultural Credit and Farmer Institutions:** Timely access to both short-term and long-term institutional credit must be ensured, particularly for small and marginal farmers. Strengthening Farmer Producer Organisations (FPOs) can improve credit access and market linkages.
- **Promoting Sustainable and Climate-Resilient Agriculture:** Adoption of crop diversification, micro-irrigation, natural farming, and climate-smart practices will improve productivity while conserving water, soil, and biodiversity.
- **Strengthening Post-Harvest Infrastructure and Value Chains:** Investment in storage, cold chains, processing units, and rural logistics at the block and panchayat levels will reduce post-harvest losses and enhance farmers' incomes.
- **Robust Monitoring and Outcome-Based Evaluation:** A real-time monitoring framework with measurable indicators—on the lines of the Aspirational Districts Programme—will ensure transparency, accountability, and timely course correction.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. Consider the following statements regarding the Prime Minister Dhan-Dhaanya Krishi Yojana:

1. The scheme draws inspiration from the Aspirational Districts Programme.
2. It seeks to facilitate access to both short-term and long-term institutional credit for farmers.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (c)

MISSION FOR AATMANIRBHARTA IN PULSES

Why in News: The Government of India has approved the **Mission for Aatmanirbharta in Pulses**, a **six-year initiative (2025–26 to 2030–31)** with a financial outlay of **₹11,440 crore**,

aimed at enhancing domestic pulse production and reducing import dependence.

Key Details

- The mission seeks to **achieve self-sufficiency in pulses**, reduce reliance on imports, and **improve farmers' incomes** through better seed availability, assured procurement, and improved post-harvest management.
- Pulses form a **critical component of India's food and nutritional security**, being a major source of plant protein and an integral part of sustainable cropping systems.
- India is the **largest producer and consumer of pulses**, accounting for about **25% of global production** and **27% of global consumption**.
- Despite this, India still imports nearly **14% of its domestic requirement**, as demand exceeds supply.
- In **2023–24**, pulse imports rose sharply to about **4.65 million tonnes**, with an import bill of approximately **\$3.75 billion**.
- Major exporting countries include **Canada, Australia, Myanmar, Mozambique, Tanzania, Sudan, and Malawi**.
- The mission envisages a **gradual reduction in import dependence**, with the objective of achieving near self-reliance by the end of the decade.

Mission Objectives and Targets (by 2030–31)

- **Expansion of pulses cultivation area** to about **310 lakh hectares**.
- **Increase in pulse production** to around **350 lakh tonnes**.
- **Improvement in productivity** to approximately **1,130 kg per hectare**.
- **Continuation of assured MSP-based procurement** for major pulses such as **Tur (pigeon pea), Urad (black gram), and Masoor (lentil)**.

Major Components of the Mission

- **Seed Development and Availability**
 - ✓ Distribution of certified seeds and seed kits to farmers to improve seed replacement rates.
 - ✓ Development of **high-yielding, pest-resistant, and climate-resilient varieties** through ICAR and State Agricultural Universities.
 - ✓ Use of digital platforms such as the **SATHI portal** for seed traceability and quality assurance.
- **Area Expansion and Crop Diversification**

- ✓ Bringing additional area under pulses by utilising **rice fallows and suitable rainfed regions**.
- ✓ Promotion of **model pulses villages** to demonstrate best agronomic practices and technology adoption.
- **Infrastructure, Processing and Value Addition**
 - ✓ Support for establishing **pulses processing and packaging units** to reduce post-harvest losses.
 - ✓ Creation of storage and value-addition infrastructure to improve market realisation for farmers.
- **Farmer Support and Market Stabilisation**
 - ✓ Assured procurement through agencies such as **NAFED and NCCF** under the **PM-AASHA framework**.
 - ✓ Capacity-building programmes to improve farm practices and market awareness.
 - ✓ Monitoring of global pulse prices to protect farmers from excessive price volatility.

Significance

- Strengthens **nutritional security** by ensuring availability of affordable protein.
- Promotes **crop diversification and climate-resilient agriculture**, especially in rainfed areas.
- Reduces vulnerability to **global price fluctuations and import shocks**.
- Aligns with the broader goals of **Atmanirbhar Bharat** and **sustainable agricultural growth**.

Conclusion

The Mission for Aatmanirbharta in Pulses represents a comprehensive approach to addressing India's long-standing pulse deficit through productivity enhancement, institutional support, and market stability. If implemented effectively, it can significantly reduce import dependence, enhance farmers' incomes, and strengthen India's nutritional and agricultural resilience.

SABKI YOJANA, SABKA VIKAS

Why in News: The **Ministry of Panchayati Raj (MoPR)** has launched the **People's Plan Campaign (PPC) 2025–26** under the theme "**Sabki Yojana, Sabka Vikas**", beginning **October 2 (Gandhi Jayanti)**, to facilitate the preparation of **Panchayat Development Plans (PDPs) for 2026–27**, reinforcing participatory and inclusive rural governance.

Key Details

- The **People's Plan Campaign** was initiated in **2018** to institutionalise **participatory and decentralised planning** at the Panchayat level.
- The campaign promotes **evidence-based, data-driven and convergent planning**, aligning **local needs with national development priorities**.
- Since **2019–20**, over **18 lakh Panchayat Development Plans** have been uploaded on the **eGramSwaraj portal**, reflecting improved digital capacity and transparency in local governance.

Objectives of the Campaign

- **Participatory Planning:** To strengthen **grassroots democracy** by ensuring active participation of citizens through Gram Sabhas in local development planning.
- **Transparency and Accountability:** To enhance transparency in planning and implementation through digital platforms such as **eGramSwaraj, Meri Panchayat App, Panchayat NIRNAY**, and back-end monitoring systems.
- **Inclusive Development:** To prioritise the needs of **marginalised sections**, including Scheduled Tribes and vulnerable communities, in Panchayat planning.
- **Evidence-Based Decision Making:** To encourage Panchayats to use **data analytics, dashboards, and indices such as the Panchayat Advancement Index (PAI)** for informed planning.
- **Convergence of Schemes:** To improve efficiency by converging resources from flagship schemes like **MGNREGA, Jal Jeevan Mission, National Health Mission**, and other sectoral programmes.

Key Features

- **Campaign Launch:** October 2 (Gandhi Jayanti)
- **Special Gram Sabhas:** Conducted to review progress, identify gaps, and finalise local development priorities.
- **Digital Monitoring:** Real-time monitoring through **web-based platforms and GIS-enabled tools**.
- **Capacity Building:** Training of elected representatives, functionaries, and community facilitators to strengthen planning and implementation capacities.
- **Own Source Revenue (OSR):** Emphasis on enhancing Panchayats' ability to **mobilise and manage local resources**.

- **Constitutional Basis:** Anchored in the **73rd Constitutional Amendment Act, 1992**, which establishes Panchayati Raj Institutions as the **third tier of governance**.

Conclusion

The “**Sabki Yojana, Sabka Vikas**” campaign reflects India’s sustained commitment to **decentralisation and cooperative federalism**. By integrating citizen participation with digital governance and evidence-based planning, the initiative aims to make rural development more **inclusive, accountable, and responsive to local needs**.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. The “Sabki Yojana, Sabka Vikas” campaign is launched under the People’s Plan Campaign by which of the following ministries?

- (a) Ministry of Rural Development
- (b) Ministry of Panchayati Raj
- (c) Ministry of Housing and Urban Affairs
- (d) Ministry of Home Affairs

Answer: (b)

PM-SETU

Why in News: The Prime Minister recently launched **PM-SETU** at the Kaushal Deekshant Samaroh held at Vigyan Bhawan, New Delhi, with the objective of strengthening India’s vocational education and skilling ecosystem through the upgradation of Industrial Training Institutes (ITIs).

What is PM-SETU?

- **PM-SETU** is a **centrally sponsored skilling initiative** aimed at upgrading **government Industrial Training Institutes (ITIs)** across India.
- The scheme seeks to transform ITIs into **industry-relevant, modern skilling centres** aligned with emerging technologies and labour-market requirements.
- The broader vision is to move towards a “**government-owned, industry-linked**” model to improve employability and productivity.

Model of Implementation

- The scheme follows a **hub-and-spoke model**:
 - ✓ **200 Hub ITIs** act as centres of excellence.
 - ✓ Each hub is linked to **four Spoke ITIs**, covering **around 1,000 ITIs** in total.

- **Hub ITIs** are envisaged to provide:
 - ✓ Advanced training infrastructure
 - ✓ Smart classrooms and digital learning tools
 - ✓ Trainer capacity-building facilities
 - ✓ Placement and career support services

Key Components

- **Industry Collaboration**
 - ✓ Strong emphasis on partnerships with industry bodies and local enterprises.
 - ✓ Focus on **demand-driven training** and **industry-relevant curricula**.
- **Curriculum Modernisation**
 - ✓ Upgradation of existing courses and introduction of new ones in areas such as:
 - Advanced manufacturing
 - Renewable energy
 - Electronics and automation
 - Emerging technologies
- **Flexible Skill Pathways**
 - ✓ Integration of:
 - Long-term diploma courses
 - Short-term skill programmes
 - Modular and stackable learning options
- **Centres of Excellence**
 - ✓ Select **National Skill Training Institutes (NSTIs)** to be strengthened for advanced and specialised skilling, including exposure to global best practices.
- **Funding Pattern**
 - ✓ The scheme is implemented through **shared financial responsibility of the Centre and States**, with scope for multilateral and institutional support where applicable.

Significance

- **Future-ready Workforce:** Enhances the relevance of vocational education in line with evolving industry needs.
- **Boost to MSMEs:** Provides skilled manpower for local industries and MSMEs.
- **Atmanirbhar Bharat:** Supports self-reliance by strengthening domestic human capital.
- **Global Employability:** Improves the quality and international acceptability of India’s skilled workforce.

Conclusion

PM-SETU represents a strategic shift in India’s skilling policy by linking vocational education more closely with industry

demand. By modernising ITIs and strengthening institutional capacity, the scheme aims to build an employable, adaptive and future-ready workforce, contributing to the vision of **Skilled India and Viksit Bharat @2047**.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to the PM-SETU scheme, consider the following statements:

1. The scheme aims at upgrading government-owned Industrial Training Institutes (ITIs).
2. It follows a hub-and-spoke model in which around 200 hub ITIs are linked with several spoke ITIs.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (c)

SWASTH NARI, SASHAKT PARIVAR ABHIYAAN

Why in News: India has made significant progress in women-centric preventive healthcare through the **Swasth Nari, Sashakt Parivar Abhiyaan**, under which **over 6.5 crore women have reportedly been screened** across the country, strengthening public health outreach and women's empowerment.

Key Details

- **Implementing Ministries:** The initiative is implemented through coordinated efforts of the **Ministry of Health and Family Welfare (MoHFW)** and the **Ministry of Women and Child Development (MoWCD)**, leveraging existing health and nutrition delivery platforms.
- **Health Screening and Outreach:** Health camps were organised at **Ayushman Arogya Mandirs (Health and Wellness Centres), Community Health Centres**, and other public health facilities, focusing on screening for:
 - ✓ Anaemia
 - ✓ Hypertension and Diabetes
 - ✓ Tuberculosis
 - ✓ Breast and Cervical Cancer
 - ✓ Reproductive and selected dermatological conditions
- **Preventive and Curative Focus:** The campaign adopts a **life-cycle approach to women's health**, combining early

screening, counselling, referral services, and nutrition education to reduce disease burden and improve health outcomes.

- **Convergence with Existing Schemes:** The Abhiyaan complements ongoing flagship programmes such as:
 - ✓ **Mission Shakti** – women's safety and empowerment
 - ✓ **Poshan 2.0** – nutritional support for women and children
 - ✓ **Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)** – ensuring safe motherhood
- **Role of Anganwadi Centres:** Anganwadi Centres served as community-level hubs where women and adolescent girls participated in awareness sessions on:
 - ✓ Menstrual hygiene
 - ✓ Balanced diet and nutrition
 - ✓ Mental and physical well-being
- **Use of Technology:** Digital tools were used for **monitoring health camps, beneficiary coverage, and service delivery**, improving transparency, coordination, and efficient use of resources.
- **Community Participation:** Community-based workers, volunteers, and civil society organisations contributed to extending outreach, particularly in **rural, tribal, and hard-to-reach areas**, strengthening last-mile delivery.
- **Partnerships and Volunteering:** Collaboration with organisations such as the **Indian Red Cross Society** and local NGOs supported health awareness activities and blood donation drives, reinforcing community ownership of public health initiatives.

Conclusion

The **Swasth Nari, Sashakt Parivar Abhiyaan** reflects India's shift towards **preventive, inclusive, and women-centric healthcare**, aligned with the broader vision of **Viksit Bharat @2047**. By strengthening women's health, the initiative contributes to healthier families, improved human capital, and sustainable national development.

DEEN DAYAL LADO LAKSHMI YOJANA

Why in News: The **Deen Dayal Lado Lakshmi Yojana (DDLLY)** is a welfare scheme of the **Haryana Government**, aimed at promoting the welfare of the girl child and addressing gender imbalance through conditional financial support.

Key Details

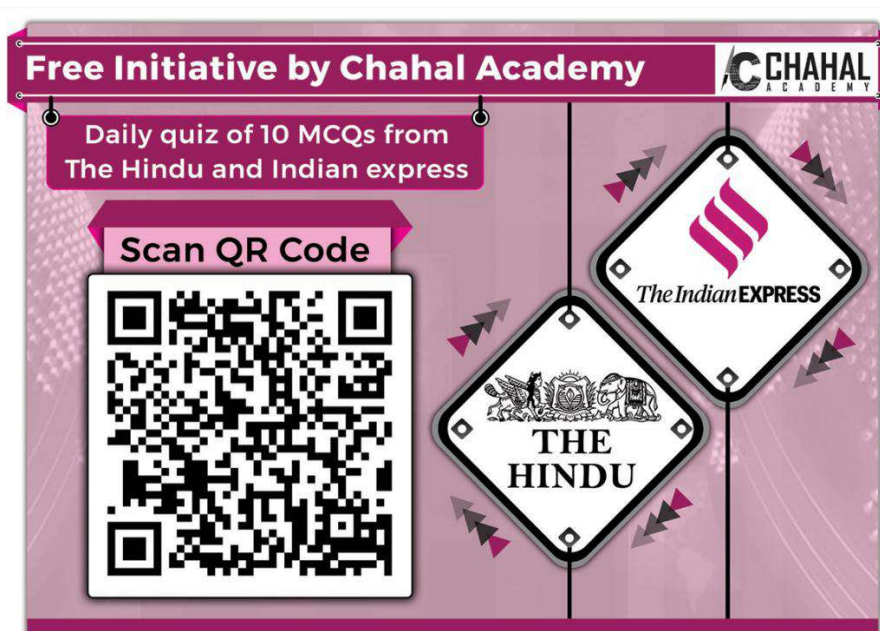
- The **Deen Dayal Lado Lakshmi Yojana**, launched by the **Government of Haryana**, focuses on **improving the status of the girl child** by providing **financial incentives to families** with girl children.
- The scheme seeks to **discourage gender bias**, promote **girl child survival**, and encourage **education and social security**.
- Financial assistance under the scheme is provided in a **phased and conditional manner**, linked to milestones such as **birth registration, immunisation, school enrolment, and continuation of education**.
- The accumulated financial benefit is typically released to the beneficiary **on attaining adulthood**, subject to fulfilment of prescribed conditions.
- The scheme reflects Haryana's broader commitment to **gender equity, inclusive growth, and social justice**.

Significance

- **Promotes Gender Equity:** The scheme addresses long-standing issues of **female foeticide, low sex ratio, and social discrimination** against girls.
- **Encourages Education:** By linking benefits to schooling, it incentivises **continued education of girl children**, reducing dropout rates.
- **Socio-economic Security:** Long-term financial support helps improve **economic security and social standing** of girls from disadvantaged households.
- **Supports National Goals:** The scheme aligns with constitutional values (Articles 14 and 15) and national initiatives promoting **women empowerment and inclusive development**.

Conclusion

The **Deen Dayal Lado Lakshmi Yojana** represents Haryana's effort to translate welfare policy into **social transformation** by investing in the girl child. Through conditional financial incentives, the scheme seeks to promote education, dignity, and long-term empowerment, contributing to a more equitable and inclusive society.



REPORTS

NATIONAL HOUSEHOLD INCOME SURVEY - 2026

Why in News: The Ministry of Statistics and Programme Implementation (MoSPI) is set to roll out India's first countrywide National Household Income Survey (NHIS) in February 2026.

Key Details

- **First Direct Measure:** Planned for February 2026, this will be India's maiden pan-India exercise to directly assess household income rather than relying on "consumption" as a welfare indicator.
- **Expert Design:** Crafted by a Technical Expert Group chaired by Dr. Surjit S. Bhalla, the survey adopts global best practices to capture varied income streams such as wages, self-employment, agriculture, and government transfers (e.g., PM-KISAN).
- **Sensitivity & Strategy:** Pre-testing in 2025 showed that 95% of respondents considered income queries "sensitive," prompting the ministry to suggest self-reporting options for well-off households and stronger privacy safeguards to improve data quality.

About NHIS 2026

- **Conducted by:** National Statistics Office (NSO), under MoSPI
- **Launch date:** February 2026
- **Coverage:** All States and Union Territories (UTs), across rural and urban areas.
- **Purpose:** To gather information on household income, spending patterns, and living conditions in India for the first time.

Significance

- **Direct Income Estimation:** Unlike earlier National Sample Surveys (NSS) focused on consumption and employment, NHIS will independently estimate household income from multiple sources such as wages, self-employment, property, pensions, remittances, government transfers, and others.
- **Addressing Inequality and Welfare:** The survey will enable income comparisons among individuals, thereby

offering sharper insights into income distribution, inequality, and household welfare across regions and social categories.

- **Policy relevance:** NHIS findings will be crucial for — Rebasing the Consumer Price Index (CPI), Revising National Accounts Statistics (NAS), and Designing poverty alleviation and social welfare policies grounded in income data rather than consumption proxies.
- **Global Alignment:** Through this initiative, India joins countries like the United States, Canada, the United Kingdom, Sri Lanka, Bangladesh, China, and Malaysia, where household income surveys form a core part of national statistical frameworks.

Methodology and Development

- **Expert Oversight:** A Technical Expert Group (TEG) led by Dr. Surjit S. Bhalla, former Executive Director for India at the IMF, was constituted to supervise the survey's design, concepts, and methodology.
- **Pre-Testing Phase:** Training-cum-pre-testing was carried out from August 4–8, 2025, at 15 NSO regional offices across different socio-economic zones, including Mumbai, Delhi, Kolkata, Chennai, Bengaluru, and Hyderabad. This assessed questionnaire clarity, structure, and respondent pace.
- **Public Consultation:** After integrating refinements based on pre-test feedback, the Draft Questionnaire/Schedule has been uploaded on the MoSPI website to invite comments from researchers, policymakers, and the general public.
- **Best Practices:** The NHIS framework draws upon internationally accepted survey practices and is structured to ensure high reliability and global data comparability.

Conclusion

The National Household Income Survey 2026 is poised to be a landmark initiative for India's data ecosystem. By shifting the focus from consumption-based to income-based assessment, it will equip policymakers with deeper insights into household welfare, inequality, and living standards, thereby strengthening the evidence base for a more inclusive economic trajectory.

SATARK NAGRIK SANGATHAN'S (SNS) REPORT

Why in News: Recently, Satark Nagrik Sangathan (SNS) released its 9th performance evaluation report on Information Commissions in India. The report gives a reality check on how far the country has progressed towards transparent and accountable governance under the Right to Information (RTI) Act.

Background: The Right to Information (RTI) Act

- The RTI Act came into force on 12 October 2005.
- It gives citizens the right to seek information from public authorities.
- The aim of the Act is to make government working open, transparent, and accountable.
- The RTI movement grew from grassroots efforts like the Mazdoor Kisan Shakti Sangathan (MKSS) in Rajasthan, which linked transparency with people's rights to livelihood and justice.
- Important court judgments such as UP vs. Raj Narain (1975) and S.P. Gupta vs. Union of India (1982) recognised the Right to Information as part of the freedom of speech and expression under Article 19(1)(a) of the Constitution.

Key Findings of SNS Report 2025

- **Non-Functional and Understaffed Commissions**
 - ✓ Several State Information Commissions (SICs) in states like Jharkhand, Himachal Pradesh, Telangana, Goa, Tripura, and Madhya Pradesh remained non-functional for long periods due to vacant posts.
 - ✓ States such as Karnataka, Maharashtra, Tamil Nadu, and Bihar were relatively active but still suffered from staff shortages.
- **Rising Backlog of Cases**
 - ✓ Between July 2024 and June 2025, over 2.4 lakh new appeals were filed.
 - ✓ Only about 1.8 lakh cases were disposed of, adding to the backlog.
 - ✓ In Telangana, at the current pace, it may take nearly 29 years to clear a new appeal.
- **Administrative Failures**
 - ✓ 20 out of 29 Information Commissions failed to publish their annual reports for 2023–24, which is mandatory under the law.
- **Weak Accountability**

- ✓ In 98% of delayed cases, no penalties were imposed on Public Information Officers (PIOs).
- ✓ This shows poor enforcement of the RTI Act.

Recent Changes in Law

- **RTI Amendment Act, 2019:** Gave the central government the power to decide the tenure and salaries of Information Commissioners, reducing their independence.
- **Digital Personal Data Protection (DPDP) Act, 2023:** Limited access to personal information under RTI unless it serves a larger public interest. While privacy is important, this may reduce transparency regarding assets or disciplinary records of public officials.

Challenges After 20 Years of RTI

- Many vacant posts in the Central Information Commission (CIC) and large case backlogs.
- Weak penalty system, which fails to discourage delays and violations.
- Safety concerns for RTI activists, despite the Whistleblower Protection Act.
- Digital divide, with poor record digitisation and outdated government websites in many states.

Way Forward

- Fill all vacancies in the CIC and SICs without delay.
- Use technology-based case management systems to reduce pendency.
- Provide regular training to Public Information Officers.
- Create clear guidelines to balance transparency under RTI with privacy under the DPDP Act.

Conclusion

The SNS report shows that while the RTI Act remains a powerful tool for democracy, its effectiveness is weakening due to poor implementation and lack of accountability. To keep the spirit of RTI alive, citizens, civil society, and the government must work together, because an informed citizenry and accountable government are as important today as they were twenty years ago.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Que. In the light of the recent Satark Nagrik Sangathan (SNS) report on the performance of Information Commissions, examine the major challenges faced by the RTI regime in India and suggest measures to strengthen transparency and accountability. (250 words) (15 Marks)

GLOBAL HUNGER INDEX (GHI)

Why in News: The **Global Hunger Index (GHI) 2025** highlights that progress in reducing global hunger has **stagnated in recent years**, raising serious concerns about the achievement of the **UN Sustainable Development Goal-2 (Zero Hunger by 2030)**.

About the Global Hunger Index (GHI)

- The **Global Hunger Index** is an **annual, peer-reviewed report** that measures hunger at the **global, regional and country levels**.
- It is published jointly by **Concern Worldwide** and **Welthungerhilfe**.
- The index adopts a **multidimensional approach**, going beyond food availability to assess **undernutrition, child health, and mortality outcomes**.

Indicators Used in GHI

- The GHI score is calculated using **four indicators**:
 - ✓ **Undernourishment** – Share of population with insufficient caloric intake.
 - ✓ **Child Stunting** – Percentage of children under five with low height-for-age (chronic undernutrition).
 - ✓ **Child Wasting** – Percentage of children under five with low weight-for-height (acute undernutrition).
 - ✓ **Child Mortality** – Under-five mortality rate, reflecting the fatal consequences of undernutrition.
- These indicators are **weighted** to produce a score ranging from **0 (best) to 100 (worst)**.
- Hunger severity levels are classified as: **Low, Moderate, Serious, Alarming, Extremely Alarming**.

Key Global Findings

- **Stagnation in Hunger Reduction**
 - ✓ Global hunger levels have shown **very limited improvement since the mid-2010s**.
 - ✓ Progress has been particularly slow in **Sub-Saharan Africa and South Asia**, where population growth, climate stress and conflict persist.
- **Zero Hunger Goal Under Threat**
 - ✓ A large number of countries are projected to **miss the SDG-2 targets by 2030**.
 - ✓ The report warns that without renewed political commitment **Zero Hunger will remain unattainable**.
- **Worsening Trends in Several Countries**

- ✓ Hunger levels have increased in several countries compared to previous years, reversing earlier gains.
- ✓ Conflict-affected and climate-vulnerable regions are the most severely impacted.

India's Performance (GHI Perspective)

- India falls in the **“serious hunger”** category.
- **Child stunting and wasting rates remain high**, indicating persistent nutrition challenges.
- While **child mortality has declined**, improvements in nutrition outcomes have been **uneven**.
- Government interventions such as:
 - ✓ **National Food Security Act (NFSA)**
 - ✓ **POSHAN Abhiyaan**
 - ✓ **PM Garib Kalyan Anna Yojana (PMGKAY)** have improved food access, but **nutrition quality and dietary diversity require further strengthening**.

Regional Trends

- **Sub-Saharan Africa:** Hunger levels remain high due to conflict, climate shocks and food insecurity.
- **South Asia:** Mixed progress, with improvements in some indicators but persistent child undernutrition.
- **West Asia & North Africa:** Stagnation caused by conflict and economic instability.
- **Latin America & Caribbean:** Moderate hunger, affected by inequality and climate events.
- **East & Southeast Asia:** Relatively low hunger but slowing progress.
- **Europe & Central Asia:** Lowest hunger levels globally.

Major Causes of Global Hunger

- **Conflict and Political Instability:** Armed conflicts disrupt food production, markets and humanitarian access.
- **Climate Change:** Droughts, floods and heatwaves undermine agricultural productivity and livelihoods.
- **Economic Shocks:** Inflation, income loss and reduced public spending worsen food insecurity.
- **Governance Gaps and Inequality:** Weak institutions and social exclusion prevent equitable access to nutritious food.

Way Forward

- **Strengthen Food Systems:** Promote climate-resilient and sustainable agriculture.

- **Focus on Nutrition Security:** Address maternal nutrition, child health and dietary diversity.
- **Enhance Social Protection:** Improve targeting and delivery of food and nutrition schemes.
- **Global Cooperation:** Scale up humanitarian assistance and fair trade mechanisms.
- **Data-Driven Monitoring:** Strengthen nutrition surveillance at local and national levels.

Conclusion

The Global Hunger Index underscores that hunger is no longer declining at the required pace. Achieving food and nutrition security demands **integrated policy action**, combining agricultural resilience, nutrition-focused interventions, social protection and international cooperation. For India and the world, the challenge lies not merely in producing food, but in ensuring **nutritious, affordable and equitable diets for all**.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Que. Examine the key findings and causes of chronic hunger in the world. Suggest integrated policy measures for achieving sustainable food and nutrition security. (250 Words) (15 Marks)

ACCIDENTAL DEATHS & SUICIDES IN INDIA (ADSI) REPORT

Why in News: The **National Crime Records Bureau (NCRB)** released the **Accidental Deaths and Suicides in India (ADSI) 2023** report, providing data on **suicides, accidental deaths, road accidents, and deaths due to substance abuse** in India.

Key Findings

1. Suicides in India

Indicator	Observation
Total Suicides	1,71,418 (marginal increase over 2022)
Suicide Rate	Decline compared to previous year
Gender Pattern	Males: 72.8%; Females: 27.2%
States/UTs with Highest Suicide Rate	A&N Islands, Sikkim, Kerala
Major Causes	Family problems (~32%), illness (~19%), drug/alcohol addiction (~7%), marriage-related issues (~5%)

Other Causes	Love affairs, bankruptcy/indebtedness, unemployment, exam failure
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Farmer Suicides

- **Total:** 10,786 (about **6%** of total suicides)
- **Highest share:** Maharashtra (~38.5%) and Karnataka (~22.5%)
- **States reporting negligible/zero farmer suicides:** West Bengal, Bihar, Odisha, Jharkhand, Himachal Pradesh, Arunachal Pradesh, Goa

2. Accidental Deaths & Road Accidents

Indicator	Observation
Total Accidental Deaths	4,64,029 (increase compared to 2022)
Leading Vehicle in Fatalities	Two-wheelers (~46%)
Major Causes	Overspeeding (~59%), dangerous driving conditions
Peak Accident Time	Evening hours (3-9 PM)
States with High Road Accident Deaths	Uttar Pradesh, Tamil Nadu, Maharashtra, Karnataka, Madhya Pradesh
Highway Deaths	Around one-third of road accident deaths

3. Deaths Related to Drug / Substance Abuse

Category	Observation
Drug Overdose Deaths	654 deaths; higher numbers in Punjab, MP, Rajasthan
Spurious / Illicit Liquor	High fatalities reported in Jharkhand, Karnataka, Bihar, Punjab

Government Initiatives

Suicide & Mental Health Prevention

- **National Suicide Prevention Strategy (2022):** Target to reduce suicide rate by **10% by 2030**
- **Tele-MANAS:** 24x7 tele-mental health support
- **National Mental Health Programme (NMHP):** Community-based mental healthcare
- **Manodarpan:** Psychosocial support for students, teachers, and parents

Farmer Support Measures

- **PMFBY:** Crop insurance against agricultural risks

- **PM-Kisan Samman Nidhi:** ₹6,000 annual income support
- **Debt relief & state-specific support schemes**

Road Safety Measures

- Stricter enforcement of traffic laws
- Identification of accident “black spots”
- Improved road infrastructure (signage, lighting, pedestrian facilities)
- Adoption of technology (GPS, ADAS, surveillance)
- Awareness campaigns on helmets and seat belts

Conclusion

The **NCRB ADSI 2023 report** highlights persistent challenges related to **mental health, road safety, farmer distress, and substance abuse**. While policy initiatives exist, the data underscores the need for **stronger institutional capacity, preventive healthcare, behavioural change, and safer infrastructure** to reduce preventable deaths.

EXPECTED UPSC CSE QUESTION

Prelims MCQ

Que. With reference to the NCRB’s Accidental Deaths and Suicides in India (ADSI) 2023 report, consider the following statements:

1. Two-wheelers accounted for the highest share of road accident fatalities in 2023.
2. Maharashtra and Karnataka together accounted for more than 60% of farmer suicides.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (c)

PRISON STATISTICS INDIA (PSI) 2023

Why in News: The **National Crime Records Bureau (NCRB)** has released the report “**Prison Statistics India (PSI) 2023**”, which provides comprehensive data on the status of prisons, inmates, and prison administration in India.

Key Highlights

- The report brings attention to **persistent structural issues** in Indian prisons such as **overcrowding, high proportion of undertrial prisoners, inadequate**

healthcare (especially mental health), staff shortages, and the need for **human-rights-oriented prison reforms**.

- It underscores the importance of shifting from a **punitive approach to a reformative and rehabilitative prison system**.

Key Findings (PSI 2023)

Indicator	Observation
Total Prisons	1,332 prisons (1,330 in 2022)
Prison Population	Declined by about 4.4% compared to 2022
National Occupancy Rate	120.8% (Highest: Delhi ~200%; Lowest: Telangana ~72.8%)
Undertrial Prisoners	Constitute over 75% of total inmates; highest absolute numbers in Uttar Pradesh
Women Prisoners	About 4.1% of total inmates; gaps persist in healthcare, hygiene and custodial facilities
Foreign Prisoners	Mostly undertrials; major countries include Bangladesh, Nepal, Myanmar, Pakistan and Nigeria
Prison Staff Vacancies	Around 30% vacancies nationally; staff shortage affects safety and reform measures
Deaths in Prisons	Nearly 2,000 deaths reported; a significant proportion attributed to unnatural causes , including suicides

Major Challenges Identified

- **Overcrowding**
 - ✓ Leads to poor **living conditions**, affecting sanitation, ventilation, nutrition and access to medical care.
 - ✓ Hampers rehabilitation and increases custodial stress and violence.
- **Undertrial Crisis**
 - ✓ A large undertrial population reflects **delays in investigation, trial, and bail processes**.
 - ✓ Indicates inadequate access to **legal aid and speedy justice**, especially for marginalised groups.
- **Health and Mental Well-being**
 - ✓ Rising number of **unnatural deaths and suicides** highlights neglect of **mental healthcare services** in prisons.

- ✓ Shortage of trained medical and psychiatric professionals.
- **Gender and Social Vulnerabilities**
 - ✓ Women and transgender inmates face **inadequate facilities**, lack of privacy, and limited healthcare access.
 - ✓ Reports of **social discrimination** within prisons based on caste and economic background remain concerning.
- **Staff Shortages**
 - ✓ Inadequate staff strength compromises **security, inmate supervision, counselling, and reform programmes**.
 - ✓ Overburdened staff reduces effectiveness of correctional services.

Constitutional and Legal Framework

- **Article 14:** Equality before law and equal protection of laws
- **Article 21:** Right to life with dignity, including rights to health, food and humane treatment
- **Article 22:** Protection against arbitrary arrest and right to legal counsel
- **Article 23:** Prohibition of forced labour
- **Article 39A:** Mandates free legal aid and access to justice

(Eg: Supported by Supreme Court judgments such as Sunil Batra v. Delhi Administration and Hussainara Khatoon v. State of Bihar)

Conclusion

The **Prison Statistics India 2023** report reveals that Indian prisons continue to suffer from **systemic deficiencies** such as overcrowding, prolonged undertrial detention, staff shortages, and inadequate mental healthcare. Addressing these challenges requires **speedy judicial processes, strengthened legal aid, improved prison infrastructure, adequate staffing, and a reformative correctional approach** that upholds constitutional values and human dignity.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Que. "India's prison system reflects chronic issues of overcrowding, undertrial predominance and neglect of mental health." Discuss. (150 words) (10 marks)

WHO GLOBAL REPORT ON THE TRENDS IN PREVALENCE OF TOBACCO USE

Why in News: The World Health Organization (WHO) shared the Global Report on Trends in Prevalence of Tobacco Use 2000–2024, offering estimates of tobacco use in the adult population (aged 15 years and older) and projections through 2025–2030.

Global Trends (2000–2024)

Indicator	2010	2024	Observation
Tobacco use among adults (15+)	26.2%	19.5%	Substantial drop
E-cigarette Users	N/A	100+ million	New health & regulatory challenges
Total users	1.32 billion	1.2 billion	1 in 5 adult population

Status and Progress of India

- **Tobacco Users (2024):** ~243.48 million adults (15+ years).
- **Global Ranking:** 2nd largest producer (after China) and 2nd largest exporter (after Brazil).
- **Progress:** An expected 43% relative reduction in tobacco prevalence between 2010 and 2025, surpassing the WHO NCD target of a 30% relative reduction by 2025.
- **Major Producing States:** Gujarat (30%), Andhra Pradesh, Karnataka, Uttar Pradesh and Bihar are the other significant producers.

Initiatives in India to Curb Tobacco Consumption

- **Cigarettes & Other Tobacco Products Act (COTPA), 2003:**
 - ✓ Smoking is banned in public places.
 - ✓ Limits sale to minors.
 - ✓ Regulates advertisement, packaging and labelling.
- **The Prohibition of Electronic Cigarettes Act, 2019**
 - ✓ Bans the manufacture, sale, import and advertisement of e-cigarettes.
 - ✓ National Tobacco Control Programme (NTCP, 2007-08)
 - ✓ Raises awareness of its dangers.

- **Recent Initiatives:**

- ✓ **Tobacco-Free Film Rules (2024):** Restricts portrayal of tobacco use in movies/TV.
- ✓ **Yellow Line Campaign:** Farmers out 100-yard boundaries around schools in which sale is forbidden.
- ✓ **Taxation:** Excise and GST hikes to reduce consumption.

Conclusion

While India is on course to meet and exceed WHO NCD targets, 20% of adults worldwide still use tobacco, and now e-

cigarettes are presenting new challenges. Continuous action - legal, fiscal, educational and behavioural is required to achieve a reduction in the burden of tobacco-related disease globally.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Que. "Despite considerable advances, tobacco use still remains a significant public health problem in both India and the rest of the world." Comment. (150 Words) (10 Mark)

PERSONALITIES IN NEWS

SONAM WANGCHUK

Why in News: Sonam Wangchuk, noted educationist, environmental activist, and prominent voice from Ladakh, has been in the news for leading peaceful campaigns demanding **statehood for Ladakh, Sixth Schedule protection, and safeguards for local ecology and livelihoods**, which have reignited debates on governance, federalism, and civil liberties.

Preventive Detention in India



- **Preventive detention** aims to prevent a person from committing a potential offence in the future, unlike **punitive detention**, which follows the commission of an offence.
- It empowers the State to detain individuals considered a threat to **public order, national security, or essential services**.
- **Constitutional Basis:**
 - ✓ Provided under **Article 22** of the Constitution.
 - ✓ A person can be detained without trial for up to **three months**, after which an **Advisory Board** must review the detention.
- Preventive detention laws are considered **exceptions to personal liberty** and are subject to strict procedural safeguards.

National Security Act (NSA), 1980

- **Objective:**
To prevent actions prejudicial to:

- ✓ National security
- ✓ Public order
- ✓ Defence of India
- ✓ Relations with foreign powers
- ✓ Maintenance of essential supplies and services

- **Authorities empowered:** Central and State Governments, District Magistrates, and Police Commissioners.
- **Key Provisions:**
 - ✓ Grounds of detention must be communicated to the detainee within **5–10 days** (extendable to 15 days in special cases).
 - ✓ Detention must be reviewed by an **Advisory Board** (comprising High Court judges) within **three weeks**.
 - ✓ Maximum detention period is **12 months**, unless revoked earlier.
 - ✓ The detainee **does not have the right to legal representation** before the Advisory Board.
 - ✓ Certain information may be withheld in the **public interest**.

Sonam Wangchuk's Advocacy

- Advocates for:
 - ✓ **Full statehood for Ladakh**
 - ✓ **Inclusion under the Sixth Schedule** to protect tribal rights and culture
 - ✓ **Environmental protection** in a fragile Himalayan ecosystem
- Additional demands include:
 - ✓ A **separate Public Service Commission** for Ladakh
 - ✓ Greater political representation for **Leh and Kargil**
- He has adopted **non-violent methods**, including peaceful protests and fasting, to highlight these demands.

Conclusion

The developments surrounding Sonam Wangchuk's activism highlight the **tension between national security, public order, and civil liberties** in India. Preventive detention laws like the NSA, though constitutionally sanctioned, remain controversial due to their **wide discretionary powers** and potential for misuse. The episode underscores the need to

balance **democratic dissent, federal aspirations, and constitutional safeguards**—a recurring challenge in Indian governance.

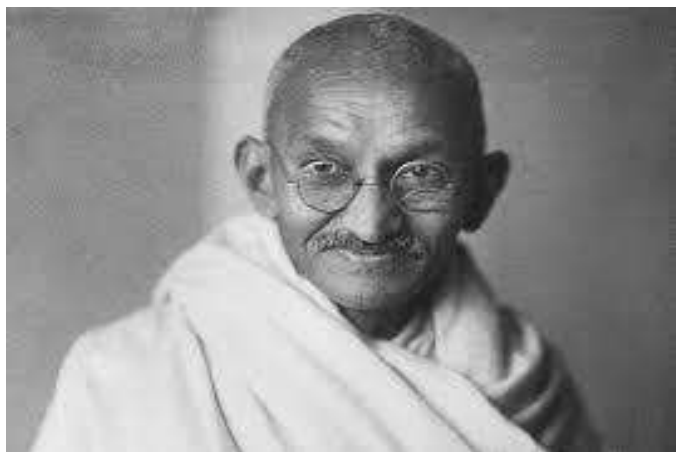
GANDHI JAYANTI 2025

Why in News: Gandhi Jayanti, observed on **2 October 2025**, marks the **156th birth anniversary of Mahatma Gandhi**, reaffirming the relevance of his ideals of non-violence, truth, and social justice in contemporary global and national challenges.

Why is Gandhi Jayanti Important?

- Gandhi Jayanti commemorates the birth of the leader who transformed India's freedom struggle into a **mass-based, moral, and non-violent movement**.
- The day is also observed globally as the **International Day of Non-Violence**, reflecting Gandhi's universal influence.

About Mahatma Gandhi



- **Full Name:** Mohandas Karamchand Gandhi
- **Born:** 2 October 1869, Porbandar (Gujarat)
- **Died:** 30 January 1948 (Assassinated)
- **Title:** "Mahatma" (by Rabindranath Tagore), "Father of the Nation" (popular attribution)

Early Life and Education

- Gandhi was born into a disciplined household where values of **simplicity, honesty, and spirituality** shaped his worldview.
- He studied law in London (Inner Temple), where exposure to Western thought and ethical writings influenced his moral philosophy.

Intellectual Influences

- Thinkers like **Leo Tolstoy and John Ruskin** deeply influenced Gandhi's ideas on morality and social justice.

- Ruskin's *Unto This Last* shaped Gandhi's concept of **Sarvodaya** (welfare of all).

South Africa Phase (1893–1914)

- Gandhi's experience of racial discrimination in South Africa led to the evolution of **Satyagraha** as a method of resistance.
- Institutions like the **Natal Indian Congress** and **Indian Opinion** became platforms for organised non-violent protest.

Return to India and Freedom Struggle

- After returning in 1915, Gandhi emerged as the central leader of India's national movement by addressing local grievances through mass mobilisation.

Major Movements

- **Champaran Satyagraha (1917):** First successful experiment of Satyagraha in India; highlighted peasant exploitation.
- **Kheda Satyagraha (1918):** Secured tax relief for farmers affected by famine and crop failure.
- **Ahmedabad Mill Strike (1918):** Strengthened labour rights and established Gandhi's role as a mediator.
- **Non-Cooperation Movement (1920–22):** Marked mass participation in the freedom struggle through peaceful means.
- **Salt March / Civil Disobedience (1930):** Symbolised defiance of unjust laws and attracted global attention.
- **Poona Pact (1932):** Addressed political representation of Dalits while preserving social unity.
- **Quit India Movement (1942):** Final mass movement demanding immediate British withdrawal ("Do or Die").

Role in Indian National Congress

- Gandhi served as **INC President in 1924 (Belgaum Session)**.
- He shifted Congress from elite leadership to a **people-centric organisation**.

Final Years and Death

- Gandhi worked tirelessly to prevent communal violence during **Partition (1947)**.
- He was assassinated on **30 January 1948**; his last words are believed to be "Hey Ram".

Relevance of Gandhian Ideas Today

- **Non-violence:** Relevant in addressing conflicts, extremism, and social unrest.
- **Truth and Ethics:** Crucial in an era of misinformation and declining public trust.
- **Swadeshi:** Resonates with initiatives like **Atmanirbhar Bharat**.
- **Sustainable Living:** Offers solutions to climate change and over-consumption.

International Day of Non-Violence

- Declared by the **United Nations in 2007**, observed annually on 2 October.
- Aims to promote peace, tolerance, and dialogue amid rising global conflicts.

Conclusion

Gandhi Jayanti 2025 underscores that Gandhian principles are not merely historical ideals but **practical tools for ethical governance, social harmony, and sustainable development** in the 21st century.

PANDIT CHHANNULAL MISHRA

Why in News: Recently, Pandit Chhannulal Mishra, one of India's most celebrated Hindustani classical vocalists, passed away.

About Pandit Chhannulal Mishra



- Renowned exponent of **Hindustani classical vocal music**
- Belonged to the **Kirana Gharana**, with strong influences of **Banaras (Benares) style**

- Known for mastery over:
 - ✓ **Khyal**
 - ✓ **Thumri**
 - ✓ **Dadra**
 - ✓ **Bhajans**
- Played a crucial role in **popularising classical music among the masses** without diluting its purity

Major Contributions

- Integrated **folk, devotional, and classical traditions**, especially from eastern Uttar Pradesh
- Actively worked for:
 - ✓ Preservation of **Guru-Shishya Parampara**
 - ✓ Training of young musicians
- Associated with cultural institutions promoting Indian classical arts
- Served as a **bridge between classical elitism and popular accessibility**

Awards and Honours

- **Padma Vibhushan** (2021) – India's second-highest civilian award
- **Padma Bhushan** (2010)
- **Padma Shri** (1974)
- **Sangeet Natak Akademi Award**

Cultural Significance

- Represented the **living heritage of Indian classical music**
- His life reflects:
 - ✓ Continuity of India's **intangible cultural heritage**
 - ✓ Importance of **oral traditions** in art transmission
- Strengthened India's **cultural diplomacy** through international performances.

MISCELLANEOUS

NOBEL PRIZE 2025

Why in News: The Nobel Prizes for 2025 were announced between **October 6 and 13, 2025**, recognising outstanding contributions in various fields of human endeavour.

Key Details

- The **Nobel Prize** was established by the will of **Alfred Nobel**, a Swedish chemist and industrialist, in **1895**.
- It honours individuals and organisations whose work has provided the **greatest benefit to humankind**.
- Prizes are awarded in **six categories**:
 - ✓ **Physics**
 - ✓ **Chemistry**
 - ✓ **Physiology or Medicine**
 - ✓ **Literature**
 - ✓ **Peace**
 - ✓ **Economic Sciences** (formally the “Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel” — established in 1968)
- Laureates receive a **gold medal**, a **diploma**, and a **cash award**, which varies each year but has recently been over **US\$1 million** per prize.

2025 Nobel Laureates: Summary & Significance

1. Physiology or Medicine

- **Laureates:** Mary E. Brunkow, Fred Ramsdell, Shimon Sakaguchi
- **Contribution:** Identification and functional understanding of **regulatory T cells (Tregs)** in the immune system.
- **Significance:**
 - ✓ Tregs help the immune system distinguish between **self and non-self**, preventing the body from attacking its own tissues.
 - ✓ This discovery has opened pathways for therapies in **autoimmune diseases** (e.g., type 1 diabetes, rheumatoid arthritis) and **immune modulation** in infections and cancer.

2. Physics

- **Laureates:** John Clarke, Michel H. Devoret, John M. Martinis
- **Contribution:** Demonstration of **macroscopic quantum tunnelling and energy quantisation** in superconducting circuits.
- **Significance:**
 - ✓ Shows that quantum mechanical effects can manifest in **large-scale systems**, not just atoms and particles.
 - ✓ This work underpins **quantum computing**, especially superconducting **qubits**, crucial for next-generation computation.

3. Chemistry

- **Laureates:** Susumu Kitagawa, Richard Robson, Omar Yaghi
- **Contribution:** Development of **metal-organic frameworks (MOFs)** — porous crystalline materials with extremely large surface areas.
- **Significance:**
 - ✓ MOFs can **store gases** (e.g., hydrogen, carbon dioxide), catalyse chemical reactions, and **trap environmental pollutants**.
 - ✓ They represent a major advance in **materials chemistry** with applications in energy storage and environmental sustainability.

4. Literature

- **Laureate:** László Krasznahorkai
- **Contribution:** Recognition for his **profound and philosophical novels** exploring the complexities of human existence.
- **Significance:**
 - ✓ His works delve into civilisation, mortality and the human psyche.
 - ✓ Combines **literary craftsmanship** with deep reflections on society and modern life.

5. Peace

- **Laureate:** María Corina Machado

- **Contribution:** Advocacy for **democracy and human rights** in Venezuela, supporting peaceful political change.
- **Significance:**
 - ✓ Emphasised **ballots, not bullets**, in challenging authoritarian rule.
 - ✓ Strengthened citizen courage and democratic aspiration in difficult political contexts.

6. Economic Sciences







- **Laureates:** Joel Mokyr, Philippe Aghion, Peter Howitt
- **Contributions:**
 - ✓ **Joel Mokyr:** Studied historical processes enabling

sustainable technological progress.

- ✓ **Philippe Aghion & Peter Howitt:** Developed theories on **innovative growth and creative destruction** — how new technologies replace old ones and drive long-term economic growth.

- **Significance:**
 - ✓ Highlights the **role of innovation** in economic development.
 - ✓ Explains differences in growth rates across economies and the importance of **innovation ecosystems**.

NOBEL PRIZE WINNERS 2025

Category	Winners	Contribution	Photo
Physics	John Clarke (United States), Michel H. Devoret (United States), John M. Martinis (United States)	For the discovery of macroscopic quantum tunnelling and energy quantisation in an electric circuit.	
Chemistry	Susumu Kitagawa (Japan), Richard Robson (Australia), Omar M. Yaghi (United States)	For the development of Metal-Organic Frameworks (MOFs) — porous materials used for CO2 capture, gas storage, catalysis, and water harvesting.	
Medicine (Physiology)	Mary E. Brunkow (United States), Fred Ramsdell (United States), Shimon Sakaguchi (Japan)	For their discoveries concerning peripheral immune tolerance — explaining how the immune system avoids attacking the body's own tissues.	
Literature	László Krasznahorkai (Hungary)	For his visionary and apocalyptic literary works that reaffirm the enduring power of art.	
Peace	Maria Corina Machado (Venezuela)	For her tireless struggle to promote democracy and peaceful political transition in Venezuela.	
Economics	Joel Mokyr (United States / Netherlands), Philippe Aghion (France), Peter Howitt (Canada)	For explaining innovation-driven economic growth and the concept of creative destruction.	

Conclusion

The **2025 Nobel Prizes** celebrated breakthroughs that deepen our understanding of the immune system, quantum physics, advanced materials, human expression, peaceful democratic change, and the economics of innovation — inspiring excellence globally across science, literature, peace and development.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to the Nobel Prize 2025, which of the following statements is/are correct?

1. Nobel Prize in Economic Sciences is officially part of Alfred Nobel's original will.
2. Metal-organic frameworks recognised in Chemistry have applications in gas storage and pollutant capture.
3. The Nobel Peace Prize 2025 was awarded for advocacy of peaceful democratic transition and human rights.

Select the correct answer:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (b)

HENLEY PASSPORT INDEX

Why in News: The **2025 Henley Passport Index** shows that both India and the United States have experienced declines in passport strength, reflecting evolving global mobility trends and changing visa policies.

About the Henley Passport Index

- **What it is:** A global ranking of national passports according to the number of countries their holders can enter without a visa or with visa-on-arrival/eTA.
- **Source:** Information is based on travel data compiled from the **International Air Transport Association (IATA)** and supplemented by Henley & Partners research.
- **Published by:** **Henley & Partners**, an advisory firm specialising in citizenship and residence planning.
- **Purpose:** It measures **travel freedom**, indicating how open countries are to global mobility and ease of international travel for their citizens.

Key Findings – 2025 Index

- **Top Ranked Passports:**

- ✓ **Singapore** – access to **193 destinations** visa-free or with visa-on-arrival.
 - ✓ **South Korea** – access to **190 destinations**.
 - ✓ **Japan** – access to **189 destinations**.
- These rankings highlight increased travel freedom for citizens of several Asian countries.

- **India's Ranking:**

- ✓ India stands at **85th place** in the 2025 Index.
- ✓ Indian passport holders have visa-free/visa-on-arrival access to **57 destinations**.
- ✓ This reflects a slight decline compared to earlier years, suggesting limited travel freedom relative to many other countries.

- **United States:**

- ✓ The US passport, historically one of the strongest, has **fallen out of the top 10 for the first time** in the Index's history.
- ✓ It is now ranked **12th**, tied with **Malaysia**, with access to **180 destinations** without pre-arranged visas.

Significance

- **Global Mobility Trends:** Passport rankings reflect diplomatic relations, visa negotiations, and geopolitical shifts that influence people's ability to travel internationally.
- **Soft Power and Diplomacy:** Strong passport rankings often indicate robust diplomatic ties and reciprocity in visa policies.
- **Economic & Social Implications:** Higher travel freedom can support business, tourism, education, and cultural exchange. Conversely, lower rankings may affect international connectivity for citizens.

Limitations

- The Index measures **visa access only**, not other aspects of travel ease such as cost, restrictions, or bilateral agreements not reflected in visa requirements.
- Rankings do not account for temporary travel restrictions (e.g., pandemic-related policies).

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Que. With reference to the Henley Passport Index 2025, which of the following statements are correct?

1. The index ranks passports based on the number of countries their holders can enter without pre-arranged visas.

2. India's passport ranks within the top 50 global passports in 2025.

3. The United States has fallen out of the top 10 rankings in the 2025 index.

Select the correct answer:

(a) 1 and 2 only
 (b) 1 and 3 only
 (c) 2 and 3 only
 (d) 1, 2 and 3

Answer: (b)

UNEP 'ADAPTATION GAP REPORT'

Why in News: Amid accelerating climate change and rising global temperatures, the **UNEP Adaptation Gap Report** highlights that **insufficient adaptation finance for developing countries** is putting lives, livelihoods, and economic stability at serious risk, even as climate impacts intensify.

About the Adaptation Gap Report

- **Published by:**
 - ✓ United Nations Environment Programme (UNEP) (with technical inputs from UNEP Copenhagen Climate Centre and other global institutions)
- **Nature of the Report:**
 - ✓ The Adaptation Gap Report is **UNEP's annual flagship publication** that assesses global efforts to adapt to climate change.
- **Objective:** To track progress in:
 - ✓ Climate adaptation planning
 - ✓ Implementation of adaptation measures
 - ✓ Availability and adequacy of adaptation finance and to assess how far the world is from achieving climate-resilient development.
- **Primary Focus:**
 - ✓ Evaluates whether countries - particularly developing and vulnerable nations - are adapting fast enough to climate risks.
 - ✓ Quantifies the **adaptation finance gap**, providing evidence to inform negotiations under the **UNFCCC and COP processes**.

Key Findings

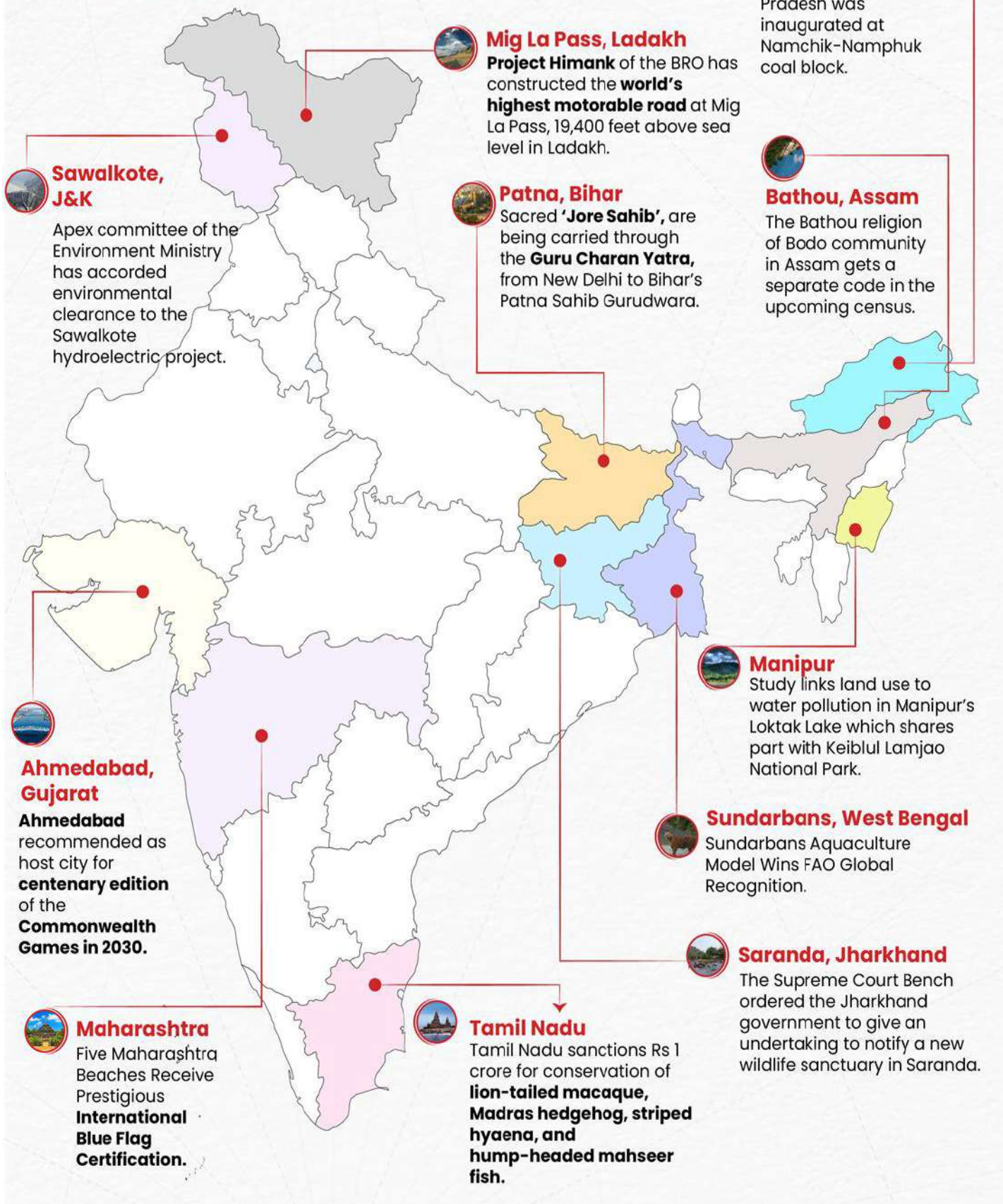
- **Rising Cost of Adaptation:**

- ✓ Model-based estimates suggest that **developing countries may require around US\$300–320 billion per year by the mid-2030s** for effective climate adaptation.
- ✓ When estimated using needs expressed in **Nationally Determined Contributions (NDCs)** and **National Adaptation Plans (NAPs)**, adaptation costs are even higher.
- **Large Adaptation Finance Gap:**
 - ✓ International public adaptation finance flows to developing countries remain **far below required levels**, at **well under US\$30 billion annually** in recent years.
 - ✓ This implies that **adaptation needs are more than 10 times current finance flows**.
- **Targets at Risk:**
 - ✓ At current trends, the **Glasgow Climate Pact commitment** to double adaptation finance from 2019 levels is **unlikely to be fully achieved**.
 - ✓ Existing climate finance commitments, including discussions on the **New Collective Quantified Goal (NCQG)**, are **insufficient to close the adaptation finance gap**.
- **Role of the Private Sector:**
 - ✓ The report highlights that the **private sector has untapped potential** to contribute significantly to adaptation finance.
 - ✓ With appropriate **policy support, risk-sharing mechanisms, and blended finance instruments**, private finance could mobilise **tens of billions of dollars annually**.

Significance

- Highlights that **adaptation is underfunded compared to mitigation**, despite being critical for climate-vulnerable countries.
- Reinforces that delayed adaptation will lead to **higher future costs**, loss of development gains, and increased humanitarian crises.
- Strengthens the case for **equity and climate justice**, as countries least responsible for emissions face the highest adaptation burden.

Places in News India



Places in News World

Tajikistan

India withdrew from the **Ayni** airbase in Tajikistan after the expiration of the bilateral agreement.



Italy

Italy's births are set to sink to a **new record low in 2025**.



Turkiye

A **6.1 magnitude Earthquake** hits Turkey's **Balıkesir Province**.



Haiti

Displacement in Haiti reaches **Record High** as **1.4 Million People Flee** Violence



Venezuela

Venezuela has deployed its troops along its **Colombian border** following **US naval strikes** on alleged drug carrying Venezuelan boats.



Kyrgyzstan

India, Kyrgyz Republic Agree to Strengthen Cooperation on Counterterrorism and Regional Security.



Thitu Island

A Chinese ship and a Philippine vessel collided near Thitu Island, which is controlled by the Philippines.



Qatar

India has expanded its Unified Payments Interface (UPI) services to Qatar.



Philippines

Philippines has been **struck by an earthquake** of magnitude 6.9.



Timor Leste

Timor Leste joins **ASEAN** as the **11th member**.



Vietnam

72 nations signed the UN Convention against Cybercrime in Hanoi, Vietnam



Malaysia

22nd Association of Southeast Asian Nations (ASEAN)-India Summit held in Malaysia.



Durand Line

Border clashes erupted between Pakistan and Afghanistan along the disputed Durand Line.



Pakistan

Recently Pakistan has offered the US the opportunity to develop and operate Port Pashi, as per reports.



Maldives

Maldives became first country to halt mother-to-child transmission of HIV, syphilis and hepatitis B.



Iran

India gets **six-month U.S. sanctions waiver** on **Chabahar port** in Iran.



Egypt

India sends the **Minister to Egypt** for **Gaza summit**.



PRACTICE QUESTIONS FROM THE HINDU & INDIAN EXPRESS

(OCTOBER 2025)

DAILY PRACTICE MCQS

Q1. Which of the following statements are correct in respect of H-1B visa?

- It is a non-immigrant visa that allows U.S. companies to hire foreign workers in specialty occupations.
- The initial duration of an H-1B visa is 3 years, extendable up to 6 years.
- Only U.S. citizens are eligible to apply for an H-1B visa.

Select the answer using the code given below:

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1, 2 and 3

Q2. Consider the following statements:

Statement 1: The Sixth Schedule provides for the administration of tribal areas in the states of Assam, Meghalaya, Tripura, and Mizoram.

Statement 2: It allows the creation of Autonomous District Councils and Regional Councils with powers to make laws on certain specified subjects.

Which one of the following is correct in respect of the above statements?

- Both statement 1 and Statement 2 are correct and statement 2 explains statement 1
- Both statement 1 and Statement 2 are correct and statement 2 does not explain statement 1
- Statement 1 is correct, but Statement 2 is incorrect
- Statement 2 is correct, but Statement 1 is incorrect

Q3. With reference to the Right to Freedom of Speech and Expression in India, consider the following statements:

- The Right to Freedom of Speech and Expression is an absolute right under the Indian Constitution.
- Reasonable restrictions can be imposed on this right in the interest of sovereignty, security of the state, and public order.
- Defamation, obscenity, and hate speech are grounds for imposing restrictions on freedom of speech.

Which of the statements given above are correct?

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1, 2, and 3

Q4. Consider the following statements:

Assertion (A): Low inflation in India, despite being beneficial for consumers, worsens the government's fiscal position.

Reason (R): Lower inflation reduces nominal GDP growth, leading to lower tax revenues and higher fiscal deficit ratios.

Select the correct answer:

- Both A and R are true, and R is the correct explanation of A
- Both A and R are true, but R is not the correct explanation of A

(c) A is true, but R is false

(d) A is false, but R is true

Q5. Which of the following statements are correct in respect of Chamundeshwari Temple?

- Chamundeshwari Temple is located on Chamundi Hills near Mysuru, Karnataka.
- The temple is dedicated to Goddess Chamundeshwari, an incarnation of Goddess Durga.
- It was built during the reign of the Hoysala dynasty in the 12th century.

Select the answer using the code given below:

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1, 2 and 3

Q6. Which of the following is a potential concern related to Bt cotton?

- Pests developing resistance to Bt toxin
- Enhanced drought tolerance
- Faster fiber growth
- Improved soil fertility

Q7. Which of the following African countries share a coastline with the Mediterranean Sea?

- Morocco, Tunisia, Libya, Egypt
- Algeria, Sudan, Libya, Egypt
- Morocco, Mauritania, Tunisia, Egypt
- Libya, Egypt, Algeria, Mali

Q8. Consider the following statements regarding the New START Treaty:

- It was signed in 2010 between the United States and Russia to limit deployed strategic nuclear warheads and delivery systems.
- India is one of the signatories to the treaty.

Which of the statements given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

Q9. Which of the following statements are correct in respect of West Bank?

- The West Bank is a landlocked territory located to the west of the Jordan River.
- It is under the full sovereignty of the State of Israel.
- The West Bank is home to a significant Palestinian population and has areas administered by the Palestinian Authority.

Select the answer using the code given below:

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only

- (d) 1, 2 and 3

Q10. Which type of vaccine is the Measles-Rubella (MR) vaccine?

- (a) Live attenuated vaccine
- (b) Inactivated vaccine
- (c) Toxoid vaccine
- (d) Subunit vaccine

Q11. Consider the following statements regarding NATO:

- 1. The principle of “collective defense” is enshrined in Article 5 of the North Atlantic Treaty, under which an attack on one member is considered an attack on all.
- 2. Finland and Sweden both became NATO members in 2023 as part of the alliance’s expansion following the Russia-Ukraine conflict.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q12. Consider the following statements regarding the Presidency of the UN General Assembly (UNGA):

- 1. The President of the UNGA is elected annually by a simple majority of the Assembly’s members.
- 2. The office of the President of the UNGA follows a system of geographical rotation among five regional groups.
- 3. India has never held the Presidency of the UNGA since becoming a member of the United Nations.

How many of the statements given above are correct:

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q13. With reference to cloud seeding, consider the following statements:

- 1. Cloud seeding is a weather modification technique aimed at increasing rainfall by dispersing substances like silver iodide or sodium chloride into clouds.
- 2. Cloud seeding can be used to reduce the intensity of hailstorms and control fog in addition to enhancing rainfall.
- 3. The effectiveness of cloud seeding is fully predictable and guarantees rainfall.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q14. Consider the following statements:

Statement 1: The withdrawal of the southwest monsoon in India generally begins from the southern tip and progresses northwards.

Statement 2: The temperature gradient between the Indian landmass and the surrounding oceans reverses after September, causing the monsoon winds to retreat.

Statement 3: The Himalayan Mountains block the retreating monsoon winds, causing them to reverse direction over northern India first.

Choose the correct option:

- (a) Statement 1 and both Statement 2 and Statement 3 are correct, and both explain Statement 1
- (b) Statement 1 and Statement 2 are correct, but Statement 3 is incorrect
- (c) Statement 1 is correct, but both Statement 2 and statement 3 are incorrect
- (d) Statement 1 is incorrect, but both statement 2 and Statement 3 are correct

Q15. Which of the following statements is correct about Article 19(1)(a)?

- (a) It is a fundamental right available to all citizens of India
- (b) It guarantees absolute freedom without any restrictions
- (c) It only applies to government employees
- (d) It is part of the Directive Principles of State Policy

Q16. Consider the following statements:

Statement 1: The ACC is responsible for appointments to several top-level posts in the central government, including heads of public sector undertakings and senior bureaucratic positions.

Statement 2: The ACC consists of the Prime Minister as the Chairperson and the Minister of Home Affairs as the Co-Chairperson.

Which one of the following is correct in respect of the above statements?

- (a) Both statement 1 and Statement 2 are correct and statement 2 explains statement 1
- (b) Both statement 1 and Statement 2 are correct and statement 2 does not explain statement 1
- (c) Statement 1 is correct, but Statement 2 is incorrect
- (d) Statement 2 is correct, but Statement 1 is incorrect

Q17. Consider the following statements regarding the G20:

- 1. The G20 operates as a formal international organization with legally binding decisions and a permanent secretariat.
- 2. The G20 provides a platform for major advanced and emerging economies to coordinate on global economic issues, financial stability, and sustainable development.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q18. With reference to Antimicrobial Resistance (AMR), consider the following statements:

- 1. AMR occurs when microorganisms such as bacteria, viruses, fungi, and parasites evolve to resist the effects of medications that once could successfully treat them.
- 2. Overuse and misuse of antibiotics in humans, animals, and agriculture are major drivers of AMR.
- 3. AMR only poses a threat to healthcare in developing countries and has minimal impact on global health.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q19. Which Indian state is connected to Myanmar and Thailand through the India-Myanmar-Thailand Trilateral Highway?

- (a) Assam
- (b) Manipur
- (c) Nagaland
- (d) Mizoram

Q20. Consider the following statements:

Statement I: ASEAN aims to promote economic, political, and cultural cooperation among Southeast Asian countries.

Statement II: ASEAN has a principle of non-interference in the internal affairs of member countries.

Statement III: ASEAN has established the ASEAN Free Trade Area (AFTA) to boost intra-regional trade.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
- (b) Both Statement II and Statement III are correct but only one of them explains Statement I
- (c) Only one of the Statements II and III is correct and that explains Statement I
- (d) Neither Statement II nor Statement III is correct

Q21. Consider the following statements:

Statement 1: The Government of India has launched second-generation (2G) ethanol plants to promote the use of biofuels and reduce dependence on fossil fuels.

Statement 2: 2G ethanol is produced mainly from food crops like sugarcane juice and maize.

Which one of the following is correct in respect of the above statements?

- (a) Both statement 1 and Statement 2 are correct and statement 2 explains statement 1
- (b) Both statement 1 and Statement 2 are correct and statement 2 does not explain statement 1
- (c) Statement 1 is correct, but Statement 2 is incorrect
- (d) Statement 2 is correct, but Statement 1 is incorrect

Q22. Consider the following statements:

Statement I: AFSPA gives special powers to the armed forces in “disturbed areas” to maintain public order.

Statement II: Under AFSPA, armed forces can arrest without warrant, search premises, and use force, even to the extent of causing death, if deemed necessary.

Statement III: A state government can declare an area as “disturbed” and enforce AFSPA without any role of the central government.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
- (b) Both Statement II and Statement III are correct but only one of them explains Statement I

- (c) Only one of the Statements II and III is correct and that explains Statement I
- (d) Neither Statement II nor Statement III is correct

Q23. Consider the following statements regarding the Collective Security Treaty Organization (CSTO):

1. CSTO is a Russia-led military alliance that provides for collective defense among its member states.
2. India and Pakistan are full members of CSTO.
3. CSTO has a provision similar to NATO’s Article 5, wherein an attack on one member is considered an attack on all.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2, and 3

Q24. Consider the following statements regarding the Insolvency and Bankruptcy Code (IBC), 2016:

1. The IBC provides a time-bound process for insolvency resolution of companies, individuals, and partnership firms.
2. Under the IBC, operational creditors have no role in initiating the insolvency resolution process.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q25. Which of the following statements are correct in respect of Green Climate Fund (GCF):

1. The GCF was established under the United Nations Framework Convention on Climate Change (UNFCCC) to assist developing countries in adaptation and mitigation practices to counter climate change.
2. It is headquartered in Geneva, Switzerland, and primarily financed by private corporations.
3. The GCF provides financial support to projects and programmes that reduce greenhouse gas emissions and enhance climate resilience.

Select the answer using the code given below:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q26. Consider the following with reference to Astrosat:

1. Astrosat is India’s first dedicated multi-wavelength space observatory launched by ISRO.
2. It carries instruments that observe in ultraviolet, visible, and X-ray wavelengths.
3. Astrosat was launched in 2015 using a PSLV rocket from Sriharikota.

How many of the above is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q27. Why is the Red Sea region considered strategically important in global geopolitics?

- (a) It is a hub for oil shipping routes connecting the Gulf to Europe
- (b) It has a high concentration of rare minerals and gold
- (c) It serves as the primary source of freshwater for the Arabian Peninsula
- (d) It is the only maritime route connecting Africa to South America

Q28. With reference to the National Security Act (NSA), 1980, consider the following statements:

- 1. Under the NSA, a person can be detained for up to 12 months without formal charges.
- 2. Both the Central and State governments have the power to invoke the NSA.
- 3. A detainee under NSA is entitled to the same rights as an accused in regular criminal trials, including immediate bail and legal counsel.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q29. Consider the following statements:

Statement 1: Organizations in India require an FCRA license to receive foreign contributions legally.

Statement 2: The Ministry of Home Affairs (MHA) is the competent authority that grants and regulates FCRA licenses.

Which one of the following is correct in respect of the above statements?

- (a) Both statement 1 and Statement 2 are correct and statement 2 explains statement 1
- (b) Both statement 1 and Statement 2 are correct and statement 2 does not explain statement 1
- (c) Statement 1 is correct, but Statement 2 is incorrect
- (d) Statement 2 is correct, but Statement 1 is incorrect

Q30. Consider the following with reference to the Enforcement Directorate (ED):

- 1. The ED is primarily responsible for enforcing the Prevention of Money Laundering Act (PMLA) and the Foreign Exchange Management Act (FEMA).
- 2. The ED functions under the Ministry of Finance, Government of India.
- 3. The ED has the power to prosecute individuals in criminal courts without prior approval from any other agency.

How many of the above is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q31. PNGRB ensures fair competition in petroleum and natural gas markets mainly through:

- (a) Regulating upstream crude oil exploration
- (b) Granting authorization for pipelines and marketing infrastructure
- (c) Fixing prices of petroleum products
- (d) Monitoring refinery safety standards

Q32. Consider the following statements regarding the Nobel Prize: 1. The Nobel Prize is awarded in the fields of Physics, Chemistry, Literature, Peace, Physiology or Medicine, and Economic Sciences.

2. The Nobel Prize can be awarded posthumously to individuals who die before the announcement.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q33. What does the term Female Labour Force Participation Rate (FLFPR) indicate?

- (a) Percentage of women in managerial positions in government
- (b) Percentage of women actively engaged in the workforce as a proportion of the female population
- (c) Percentage of women enrolled in educational institutions
- (d) Percentage of women above 60 years

Q34. Which of the following statements are correct in respect of dugongs in India?

- 1. Dugongs are found in the Gulf of Mannar, Palk Bay, Gulf of Kutch, and Andaman & Nicobar Islands.
- 2. Their population is threatened by poaching, by-catch, habitat loss, and pollution.
- 3. The Dugong Conservation Reserve in Palk Bay was notified under the Wildlife (Protection) Act in 2022.

Select the answer using the code given below:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q35. The following statements regarding the Model Youth Gram Sabha (MYGS) initiative:

Statement 1: MYGS aims to provide students practical experience of local governance by conducting mock Gram Sabha meetings in schools.

Statement 2: The initiative is being implemented solely by the Ministry of Education across all schools in the country.

Which of the statements given above is/are correct?

- (a) Only Statement 1 is correct
- (b) Only Statement 2 is correct
- (c) Both Statement 1 and Statement 2 are correct
- (d) Neither Statement 1 nor Statement 2 is correct

Q36. Consider the following statements regarding the Vanbandhu Kalyan Yojana (VKY):

- 1. It is a flagship scheme aimed at improving education, health, and livelihoods of tribal communities.
- 2. It aims to eliminate poverty among Scheduled Tribes by providing collateral free loan for setting up cottage industries.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q37. Consider the following statements regarding water bodies that separate different landmasses:

1. The Strait of Malacca separates the Malay Peninsula from the island of Sumatra.
2. The Bering Strait separates North America from Europe.
3. The Bosphorus Strait separates the European part of Turkey from its Asian part.
4. The Torres Strait separates Australia from New Guinea.

Which of the statements given above are correct?

- (a) 1 and 3 only
- (b) 1, 3, and 4 only
- (c) 2 and 4 only
- (d) 1, 2, 3, and 4

Q38. Consider the following statements regarding the Arjun MK1A tank:

1. The Arjun MK1A features improved armor protection, including explosive reactive armor (ERA) modules and mine-resistant belly plates.
2. It is powered by a diesel engine capable of achieving speeds up to 100 km/h on all terrains.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q39. Which of the following is the correct arrangement of these National Parks of Assam from east to west?

- (a) Namdapha, Kaziranga, Nameri, Manas
- (b) Kaziranga, Namdapha, Manas, Nameri
- (c) Manas, Nameri, Kaziranga, Namdapha
- (d) Namdapha, Nameri, Kaziranga, Manas

Q40. With reference to projects in National Parks in India, consider the following statements:

1. Any project or activity in a National Park requires prior approval from the Central Government under the Wildlife Protection Act, 1972.
2. Clearance from the State Government alone is sufficient for projects located within National Parks.
3. The National Board for Wildlife (NBWL) provides recommendations to the Central Government for approval of projects in National Parks.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q41. Hydrogen gas produced by electrolysis is:

- (a) Flammable and lighter than air
- (b) Non-flammable and heavier than air
- (c) Non-flammable and lighter than air
- (d) Flammable and heavier than air

Q42. Consider the following statements:

Statement 1: The UN High Commissioner for Human Rights is the principal human rights official of the United Nations.

Statement 2: The UN High Commissioner for Human Rights is appointed by the UN General Assembly on the recommendation of the UN Secretary-General.

Which one of the following is correct in respect of the above statements?

- (a) Both statement 1 and Statement 2 are correct and statement 2 explains statement 1
- (b) Both statement 1 and Statement 2 are correct and statement 2 does not explain statement 1
- (c) Statement 1 is correct, but Statement 2 is incorrect
- (d) Statement 2 is correct, but Statement 1 is incorrect

Q43. Which of the following is not the instrument of monetary policy used by the RBI?

- (a) Cash Reserve Ratio (CRR)
- (b) Statutory Liquidity Ratio (SLR)
- (c) Repo and Reverse Repo rates
- (d) Prudential regulation of banks

Q44. With reference to Biostimulants, consider the following statements:

Statement 1: Biostimulants are gaining importance in sustainable agriculture.

Statement 2: They improve crop yield and resilience against abiotic stresses such as drought and salinity without harming soil health.

Which of the following options is correct?

- (a) Both Statement 1 and Statement 2 are true, and Statement 2 is the correct explanation of Statement 1
- (b) Both Statement 1 and Statement 2 are true, but Statement 2 is not the correct explanation of Statement 1
- (c) Statement 1 is true, but Statement 2 is false
- (d) Statement 1 is false, but Statement 2 is true

Q45. Which of the following statements are correct in respect of International Solar Alliance (ISA):

1. ISA is an alliance of more than 120 countries initiated by India and France to promote solar energy.
2. Its primary focus is to finance and deploy solar projects only in Europe and North America.
3. The headquarters of ISA is located in Gurugram, India.

Select the answer using the code given below:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q46. Consider the following with reference to NATO (North Atlantic Treaty Organization):

1. NATO originally had 12 founding member countries.
2. Finland and Sweden joined NATO before 2000.
3. NATO operates under a unified civilian Secretary General and military command structure.

How many of the above is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q47. Consider the following statements regarding AQI:

Statement 1: The Air Quality Index (AQI) is an effective tool to alert the public about health risks due to air pollution.

Statement 2: AQI is calculated based on the concentration of multiple pollutants such as PM_{2.5}, PM₁₀, NO₂, SO₂, CO, and O₃, with each pollutant assigned a specific sub-index.

Which of the following options is correct?

- (a) Both Statement 1 and Statement 2 are true, and Statement 2 is the correct explanation of Statement 1
- (b) Both Statement 1 and Statement 2 are true, but Statement 2 is not the correct explanation of Statement 1
- (c) Statement 1 is true, but Statement 2 is false
- (d) Statement 1 is false, but Statement 2 is true

Q48. With reference to the Aspirational Districts Programme in India, consider the following statements:

- 1. The program aims to improve agricultural productivity and farmer income in districts with poor socio-economic indicators.
- 2. Only districts in the North-Eastern states are included under the program.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q49. Which of the following statements are correct in respect of Triangle?

- 1. The Coral Triangle Initiative (CTI) is a multilateral partnership of six countries aimed at sustainable management of marine and coastal resources.
- 2. The Coral Triangle is a designated UNESCO World Heritage Site with full international legal protection.
- 3. Marine Protected Areas (MPAs) are one of the key strategies under the CTI to conserve biodiversity.

Select the answer using the code given below:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q50. What primarily distinguishes a ballistic missile from a cruise missile?

- (a) Ballistic missiles fly within the atmosphere the whole time.
- (b) Ballistic missiles follow a largely unpowered, ballistic trajectory after boost.
- (c) Ballistic missiles always carry nuclear warheads; cruise missiles do not.
- (d) Ballistic missiles are slower than cruise missiles.

Q51. With reference to Mission Sudarshan Chakra, consider the following statements:

- 1. It is aimed at strengthening India's integrated air and missile defense capabilities.
- 2. The mission will rely entirely on imported technology for rapid deployment.
- 3. The name "Sudarshan Chakra" is inspired by the mythical weapon of Lord Indra.

Which of the statements given above is/are incorrect?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2, and 3

Q52. With reference to Port Pasni in Pakistan, consider the following statements:

- 1. Pasni is a deep-sea port located in the Gwadar District of Baluchistan province, approximately 70 miles from the China-backed Gwadar Port.
- 2. The port has been proposed for development through a \$1.2 billion initiative involving U.S. investment, aiming to enhance access to Pakistan's critical minerals.
- 3. Pasni is situated about 100 miles from the Iranian border, enhancing its strategic significance in regional geopolitics.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1, 2, and 3
- (d) 1 only

Q53. The main function of B cells is to:

- (a) Destroy virus-infected cells
- (b) Produce antibodies
- (c) Present antigens to CD8⁺ T cells
- (d) Release histamine

Q54. Consider the following with reference to High Courts in India:

- 1. The High Courts are the highest judicial bodies at the State level under the Constitution of India.
- 2. The Chief Justice of a High Court is appointed by the President of India after consultation with the Governor of the State concerned and the Chief Justice of India.
- 3. A High Court can issue writs for the enforcement of Fundamental Rights as well as for other legal rights.

How many of the above is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q55. With reference to the Gaza Strip, consider the following statements:

- 1. The Gaza Strip shares its land borders with Israel and Egypt.
- 2. It lies on the eastern coast of the Mediterranean Sea.
- 3. Jordan shares a border with the Gaza Strip.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q56. With reference to the New START Treaty, consider the following statements:

- 1. The treaty was signed between the United States and the Russian Federation in 2010 and entered into force on February 5, 2011.
- 2. It limits each country to 1,550 deployed nuclear warheads and 700 deployed delivery systems, including intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and heavy bombers.
- 3. The treaty includes verification measures such as on-site inspections and data exchanges to ensure compliance.
- 4. The New START Treaty is set to expire on February 5, 2026, and cannot be extended further.

Which of the statements given above are correct?

- (a) 1, 2, and 3 only
- (b) 2, 3, and 4 only
- (c) 1, 3, and 4 only
- (d) 1, 2, 3, and 4

Q57. Consider the following with reference to Bureau of Indian Standards (BIS):

1. The BIS is the National Standards Body of India, established under the Bureau of Indian Standards Act, 2016.
2. It functions under the Ministry of Commerce and Industry.
3. The ISI mark and Hallmark certifications are issued by the Bureau of Indian Standards.

How many of the above is/are not correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q58. Which of the following physical features forms the natural border between Lebanon and Israel?

- (a) River Jordan
- (b) Golan Heights
- (c) Blue Line demarcation area
- (d) Bekaa Valley

Q59. With reference to the Chief Justice of India, consider the following statements:

1. The CJI is appointed by the President of India based on seniority among the judges of the Supreme Court.
2. The CJI decides the composition of benches in the Supreme Court and allocates cases to them.
3. The CJI can participate in parliamentary proceedings and vote on legislation.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q60. Consider the following statements about Quantum technology:

Statement 1: Quantum computers can break certain classical encryption algorithms efficiently.

Statement 2: Shor's algorithm can factor large numbers exponentially faster than the best-known classical algorithms.

Which of the following options is correct?

- (a) Both statements are true, and Statement 2 is the correct explanation of Statement 1
- (b) Both statements are true, but Statement 2 is not the correct explanation of Statement 1
- (c) Statement 1 is true, but Statement 2 is false
- (d) Statement 1 is false, but Statement 2 is true

Q61. Consider the following statements:

Statement 1: National Green Tribunal (NGT) ensures speedy and effective disposal of environmental cases through a specialized forum.

Statement 2: It hears civil cases involving substantial environmental questions under laws like Environment (Protection) Act, 1986 and Forest (Conservation) Act, 1980.

Which one of the following is correct in respect of the above statements?

- (a) Both statement 1 and Statement 2 are correct and statement 2 explains statement 1
- (b) Both statement 1 and Statement 2 are correct and statement 2 does not explain statement 1
- (c) Statement 1 is correct, but Statement 2 is incorrect
- (d) Statement 2 is correct, but Statement 1 is incorrect

Q62. Consider the following with reference to Articles 14 and 19 of the Constitution of India:

1. Article 14 guarantees equality before law and equal protection of laws to both citizens and non-citizens.
2. Article 19 guarantees six fundamental freedoms exclusively to citizens of India.
3. The Maneka Gandhi v. Union of India (1978) judgment established that Articles 14, 19, and 21 are interconnected and mutually reinforcing.

How many of the above is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q63. Consider the following statements regarding bio-methanation:

1. It is a process of converting organic waste into methane through anaerobic digestion.
2. Methane produced can be used as fuel for cooking or electricity generation.
3. Only inorganic waste can be used in bio-methanation plants.

Which of the statements given above are incorrect?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 3 only
- (d) 1, 2, and 3

Q64. With reference to the 2025 Nobel Prize in Chemistry, consider the following statements:

1. The 2025 Nobel Prize in Chemistry was awarded for pioneering work on metal-organic frameworks (MOFs).
2. MOFs are porous materials that can be used to capture and store gases or even extract water from the air.

Which of the statements given above is/are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q65. Consider the following statements regarding India's endemic species and Red List assessments:

1. Out of the Indian species assessed by IUCN, amphibians show the lowest level of endemism.
2. Endemism indicates that the species is found only in India's wild habitats.
3. Reptiles in India have lower endemism than mammals.

Which of the statements given above are incorrect?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1, 2 and 3
- (d) 1 and 3

Q66. With reference to the 2025 Nobel Prize in Literature, consider the following statements:

1. The prize was awarded to László Krasznahorkai, a Hungarian author known for his apocalyptic and philosophical narratives.
2. He is the first Hungarian writer ever to receive the Nobel Prize in Literature.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q67. Consider the following with reference to Godavari River Basin:

1. The Godavari River originates from the Trimbakeshwar Hills near Nasik in Maharashtra and is often called the Dakshin Ganga or Ganga of the South.
2. The Indravati, Pranhita, and Sabari rivers are among its major tributaries.
3. The Polavaram Project, located in Telangana, is the largest multipurpose irrigation project on the Godavari River.

How many of the above is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q68. Which of the following correctly describes the Tele-MANAS model?

- (a) Two-tier system with cell-based and community-based support
- (b) Three-tier model integrating tele-counselling, psychiatry referral, and hospital care
- (c) Four-tier decentralised network of district mental health centres
- (d) Two-tier model of helpline and e-clinic support

Q69. Which of the following best describes the status of the Solicitor-General of India?

- (a) Constitutional authority
- (b) Statutory authority under the Law Officers (Conditions of Service) Rules, 1987
- (c) Civil servant under the Department of Legal Affairs
- (d) Member of the Union Public Service Commission

Q70. Consider the following statements:

Statement I: The Worker Population Ratio (WPR) is an indicator used to measure the proportion of the working population engaged in economic activities in a given population.

Statement II: It is calculated as the ratio of employed persons to the total population, expressed as a percentage.

Statement III: A higher WPR implies a lower labour force participation and greater unemployment in the economy.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
- (b) Both Statement II and Statement III are correct but only one of them explains Statement I

(c) Only one of the Statements II and III is correct and that explains Statement I

(d) Neither Statement II nor Statement III is correct

Q71. With reference to the findings of the UDISE+ 2024–25 report, consider the following statements:

1. For the first time, India's total number of teachers crossed 1 crore, with women forming a majority.
2. The Gross Enrolment Ratio (GER) of girls at the secondary level has declined compared to 2022–23.
3. Infrastructure improvements like functional toilets and electricity have played a significant role in reducing dropout rates among girls.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Q72. With reference to India–Afghanistan relations, consider the following statements:

1. India has continued its humanitarian assistance to Afghanistan through the delivery of wheat and medical supplies under United Nations supervision.
2. India officially recognizes the Taliban-led government established in Afghanistan since 2021.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q73. Which of the following statements are correct in respect of Axis of Resistance:

1. The Axis of Resistance refers to a political–military alliance formed to oppose Western and Israeli influence in West Asia.
2. It includes Iran, Syria, Hezbollah, and various Palestinian militant groups supported by Tehran.
3. The alliance was established under U.S. leadership to contain Iranian expansion in the region.

Select the answer using the code given below:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Q74. The Yamunotri Glacier is part of which larger mountain system?

- (a) Zaskar Range
- (b) Pir Panjal Range
- (c) Garhwal Himalayas
- (d) Dhauladhar Range

Q75. With reference to ethanol production in India, which of the following can be used as raw materials?

1. Sugarcane molasses
2. Maize
3. Wheat
4. Rice husk

Which of the following options is correct?

- (a) 1 and 2 only
- (b) 1, 2, and 3 only

- (c) 2, 3, and 4 only
 (d) All of the above

Q76. With references to the Right to Information (RTI) Act, 2005, consider the following statements:

1. The RTI Act extends to the whole of India, including the Union Territory of Jammu and Kashmir.
2. Information relating to national security and intelligence agencies is completely exempt from disclosure under the Act.
3. The Central Information Commission (CIC) and State Information Commissions (SICs) are statutory bodies.

How many of the statements given above are correct?

- (a) Only one
 (b) Only two
 (c) All three
 (d) None

Q77. With reference to hydropower projects in Jammu and Kashmir, consider the following:

1. Baglihar Dam – Chenab River
2. Kishanganga Project – Jhelum River
3. Sawalkote Project – Indus River

How many of the above is/are not correct?

- (a) Only one
 (b) Only two
 (c) All three
 (d) None

Q78. Consider the following with reference to Indian Railway Finance Corporation (IRFC):

1. IRFC was established in December 1986 as the dedicated financing arm of Indian Railways.
2. In 2025, IRFC was granted Navratna status.
3. IRFC raises funds through both domestic bonds (taxable and tax-free) and overseas borrowings.

How many of the above is/are correct?

- (a) Only one
 (b) Only two
 (c) All three
 (d) None

Q79. Which of the following best describes the primary objective of the UNESCO Virtual Museum of Stolen Cultural Objects?

- (a) To create a digital repository of stolen artifacts primarily for academic research
 (b) To provide global access to stolen cultural heritage, raise awareness about illicit trafficking, and promote restitution
 (c) To display stolen artifacts virtually, focusing mainly on items recovered from Europe and Asia
 (d) To serve as a virtual marketplace for recovered cultural artifacts

Q80. With reference to the inclusion of communities in the Other Backward Classes (OBC) list, consider the following statements:

1. The National Commission for Backward Classes (NCBC) recommends the inclusion of communities in the central OBC list, but the final decision lies with the President of India.

2. Inclusion in the central OBC list automatically entitles the community to reservation benefits in State government jobs and education.

Which of the statements given above is/are correct?

- (a) 1 only
 (b) 2 only
 (c) Both 1 and 2
 (d) Neither 1 nor 2

Q81. Consider the following with reference to types of inflation with their causes:

Type of Inflation	Cause
A. Demand-pull inflation	1. Rise in production cost
B. Cost-push inflation	2. Extra demand for goods
C. Imported inflation	3. Price rise due to global imports

How many of the above is/are correct?

- (a) Only one
 (b) Only two
 (c) All three
 (d) None

Q82. The CBI Director cannot be removed from office except:

- (a) By the Prime Minister's order
 (b) With approval of the Supreme Court
 (c) By the same process as removal of a High Court Judge
 (d) By a simple government notification

Q83. Consider the following statements about GDP growth:

1. High GDP growth guarantees equitable development.
2. GDP growth can occur without substantial employment growth in capital-intensive sectors.
3. GDP growth may be affected by global oil prices, FDI, and fiscal policy.

Which of the following statements are correct?

- (a) 1 and 2 only
 (b) 2 and 3 only
 (c) 1 and 3 only
 (d) 1, 2 and 3

Q84. Consider the following statements:

Statement 1: Twin pregnancies are classified as high-risk pregnancies in maternal and child healthcare.

Statement 2: Twin pregnancies often result in higher rates of preterm birth, low birth weight, and maternal complications.

Which of the following options is correct?

- (a) Both Statement 1 and Statement 2 are true, and Statement 2 is the correct explanation of Statement 1.
 (b) Both Statement 1 and Statement 2 are true, but Statement 2 is not the correct explanation of Statement 1.
 (c) Statement 1 is true, but Statement 2 is false.
 (d) Statement 1 is false, but Statement 2 is true.

Q85. Consider the following statements:

Statement 1: The 1951 UN Convention defines who is a refugee and sets their legal rights and state duties.

Statement 2: The 1967 Protocol removed the time and geographical limits of the 1951 Convention.

Which one of the following is correct in respect of the above statements?

- Both statement 1 and Statement 2 are correct and statement 2 explains statement 1
- Both statement 1 and Statement 2 are correct and statement 2 does not explain statement 1
- Statement 1 is correct, but Statement 2 is incorrect
- Statement 2 is correct, but Statement 1 is incorrect

Q86. Consider the following with reference to Financial Action Task Force (FATF) framework:

- The FATF is an inter-governmental body that sets global standards to combat money laundering and terror financing.
- India became a full member of FATF in 2014.
- The FATF's grey list includes countries that have completely failed to act against money laundering.

How many of the above is/are correct?

- Only one
- Only two
- All three
- None

Q87. Consider the following statements regarding the Commonwealth Games:

- The Commonwealth Games are held every four years and feature athletes from countries that are members of the Commonwealth of Nations.
- Unlike the Olympic Games, the Commonwealth Games include events such as lawn bowls, netball, and para-sports as integral parts of the competition.

Which of the statements given above is/are correct?

- Only 1
- Only 2
- Both 1 and 2
- Neither 1 nor 2

Q88. Consider the following elements commonly used in firecrackers:

- Barium
- Strontium
- Potassium nitrate
- Magnesium

Which of the above elements are primarily responsible for air pollution and health hazards due to emission of toxic substances after burning?

- 1 and 2 only
- 2 and 3 only
- 1, 2 and 4 only
- 1, 2, 3 and 4

Q89. Which of the following statements are correct in respect of physical geography of West Asia:

- The Tigris and Euphrates rivers flow through Iraq and join before entering the Persian Gulf.
- The Dead Sea, shared by Jordan and Israel, lies below sea level and is one of the saltiest water bodies on Earth.

- The Zagros Mountains form the natural border between Iran and Turkey.

Select the answer using the code given below:

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1, 2 and 3

Q90. Consider the following with reference to the Constitutional Adviser to the Constituent Assembly of India:

- B. N. Rau prepared the original draft Constitution before it was reviewed by the Drafting Committee headed by Dr. B. R. Ambedkar.
- He was an ICS officer who also served as India's representative to the United Nations Security Council later.
- He was elected as a member of the Constituent Assembly from Bengal Province.

How many of the above is/are correct?

- Only one
- Only two
- All three
- None

Q91. Consider the following statements regarding Contempt of Court in India:

- Contempt of Court includes civil contempt, which refers to willful disobedience of a court order, and criminal contempt, which includes acts that scandalize the judiciary or lower its authority.
- High Courts and the Supreme Court have the power to punish for contempt, but subordinate courts do not have this power.
- The President of India can pardon or remit punishment for contempt of court under the powers of clemency granted by the Constitution.

Which of the statements given above are correct?

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1, 2 and 3

Q92. Consider the following statements regarding Ayushman Bharat:

- Ayushman Bharat provides health insurance coverage of up to ₹5 lakh per family per year for secondary and tertiary care hospitalization under PM-JAY.
- The scheme is implemented by the Ministry of Health and Family Welfare in coordination with state governments.

Which of the statements given above is/are incorrect?

- Only 1
- Only 2
- Both 1 and 2
- Neither 1 nor 2

ANSWER KEY

Q1. (a)	Q24. (a)	Q47. (a)	Q70. (c)
Q2. (a)	Q25. (c)	Q48. (a)	Q71. (b)

Q3. (b)	Q26. (c)	Q49. (c)	Q72. (a)
Q4. (a)	Q27. (a)	Q50. (b)	Q73. (a)

Q5. (a)	Q28. (b)	Q51. (c)	Q74. (c)
Q6. (a)	Q29. (a)	Q52. (c)	Q75. (d)
Q7. (a)	Q30. (b)	Q53. (b)	Q76. (b)
Q8. (a)	Q31. (b)	Q54. (c)	Q77. (a)
Q9. (c)	Q32. (a)	Q55. (a)	Q78. (c)
Q10. (a)	Q33. (b)	Q56. (d)	Q79. (b)
Q11. (a)	Q34. (a)	Q57. (a)	Q80. (a)
Q12. (b)	Q35. (a)	Q58. (c)	Q81. (a)
Q13. (b)	Q36. (a)	Q59. (a)	Q82. (c)
Q14. (b)	Q37. (b)	Q60. (a)	Q83. (b)

Q15. (a)	Q38. (a)	Q61. (a)	Q84. (a)
Q16. (c)	Q39. (a)	Q62. (c)	Q85. (b)
Q17. (b)	Q40. (b)	Q63. (c)	Q86. (a)
Q18. (b)	Q41. (a)	Q64. (c)	Q87. (c)
Q19. (b)	Q42. (b)	Q65. (d)	Q88. (d)
Q20. (a)	Q43. (d)	Q66. (a)	Q89. (a)
Q21. (c)	Q44. (a)	Q67. (b)	Q90. (b)
Q22. (c)	Q45. (c)	Q68. (a)	Q91. (c)
Q23. (b)	Q46. (a)	Q69. (b)	Q92. (d)

DAILY MAINS ANSWER WRITING PRACTICE

Que. Women's participation in Indian agriculture has increased, yet a large share remains unpaid and excluded from land ownership and institutional support. Discuss the challenges and suggest measures for their economic empowerment. (GS3, 250 words, 15 marks)

Que. Farmer suicides in India reflect deep-rooted agrarian distress and systemic policy challenges. Critically examine the major factors contributing to this crisis and suggest long-term measures to ensure sustainable livelihoods for farmers. (GS3, 150 Words, 10 Marks)

Que. With the transformation of warfare through emerging technologies and multi-domain threats, examine the need for jointness, integration and doctrinal reforms in the Indian Armed Forces. What challenges impede the creation of an effective theatre command structure in India? (GS3, 250 Words, 15 Marks)

Que. Ensuring teacher quality while upholding the right to education poses significant policy challenges in India. Discuss in the context of constitutional and administrative provisions. (GS 2, 150 Words, 10 Marks)

Que. India's demographic dividend offers a historic opportunity for inclusive and sustained growth. Discuss how an integrated national employment policy can strengthen job creation, enhance workforce quality, and ensure equitable development across regions. (GS3, 150 Words, 10 Marks)

Que. Despite legal recognition, passive euthanasia remains practically inaccessible in India. Examine the reasons for this and suggest measures to make the process more humane and effective. (GS2, 250 Words, 15 Marks)

Que. In the context of India's metro and infrastructure projects, discuss how geopolitical tensions can affect domestic infrastructure development and procurement. Suggest policy measures to balance cost-efficiency with national security concerns. (GS2&3 10 Marks, 150 Words)

Que. What are the challenges in balancing individual liberty with state security under the preventive detention framework in India? Suggest reforms to ensure constitutional safeguards against misuse. (GS2, 250 words, 15 marks)

Que. Despite progressive legislation and programmes, India's mental health response remains fragmented and inadequate. Discuss the need for a unified and well-funded mental health framework in India. (GS2, 250 words 15 marks)

Que. Changing crime patterns in India reflect a rise in cybercrimes and offences against vulnerable groups. Analyse the causes behind this trend and suggest measures for effective prevention and justice delivery. (GS 2&3, 150 Words, 10 Marks)

Que. India's legal profession is transitioning from protectionism to partnership. Examine this statement in the context of recent reforms allowing foreign law firms to operate under regulated conditions. (GS2, 150 Words, 10 Marks)

Que. India is witnessing signs of demographic transition with declining birth rates and stabilizing death rates. Discuss how this shift can influence the country's long-term development, labour force composition, and social welfare policies. (GS1&3, 250 Words, 15 Marks)

Que. "While innovation fuels progress, it also generates social and economic disruption." Discuss how policymakers can balance innovation-led growth with equity and inclusion. (GS3, 150 Words, 10 Marks)

Que. The India-Middle East-Europe Economic Corridor (IMEC) reflects the convergence of strategic diplomacy and economic connectivity. Examine its significance for India amid shifting geopolitical and trade dynamics in West Asia and Europe. (GS2&3, 250 Words, 15 Marks)

Que. "India's emerging carbon market holds great potential for climate mitigation but also risks marginalising vulnerable communities. Examine the need for safeguards to ensure

fairness and environmental justice.” (GS3, 150 Words, 10 Marks)

Que. India and Australia are moving from strategic convergence to operational and industrial cooperation in defence ties. Examine the recent developments in the India–Australia defence partnership and their significance for the Indo-Pacific region. (GS2, 150 Words 10 Marks)

Que. India’s Total Fertility Rate (TFR) has declined below the replacement level. Critically examine the limitations of TFR as a demographic indicator and discuss the implications of declining fertility for India’s economic and social development. (GS1&2, 250 Words, 15 Marks)

Que. Discuss how the recent decline in global crude oil prices can impact India’s economy. Examine both the potential benefits and risks associated with this trend. (GS3, 150 Words, 10 Marks)

Que. In light of the shifting global climate politics and reduced enthusiasm among developed nations, discuss how India’s “steady hand” diplomacy can shape multilateral cooperation on climate action. (GS3, 250 Words, 15 Marks)

Que. Discuss the significance of recent advances in quantum computing in transforming computational capabilities. What challenges remain in achieving practical and scalable applications? (GS3, 150 Words, 10 Marks)

Que. The Smart Cities Mission (SCM) represents a paradigm shift in India’s urban governance, leveraging technology for comprehensive development. Critically assess the achievements and key implementation challenges of the Mission, and suggest a strategic pathway for scaling its outcomes across all tiers of Indian cities. (GS2, 250 Words, 15 Marks)

Que. Innovation drives growth only when supported by open and inclusive institutions. Discuss in the context of the link between technology, society, and long-term economic development. (GS3, 150 Words, 10 Marks)

Que. Explain the process of formation and intensification of tropical cyclones. Discuss the factors that influence their development and the methods used for their classification and forecasting. (GS1, 150 Words, 10 Marks)

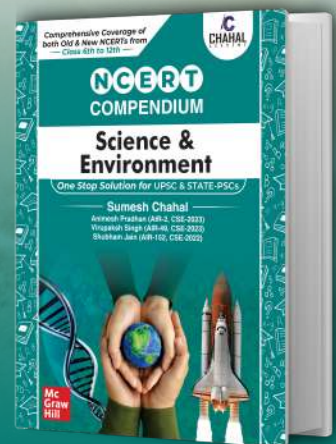
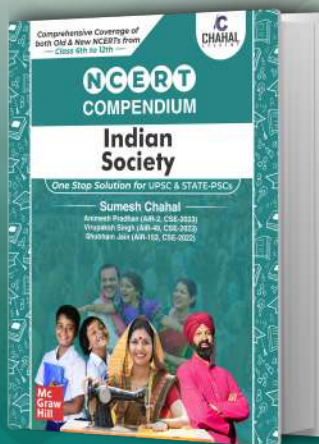
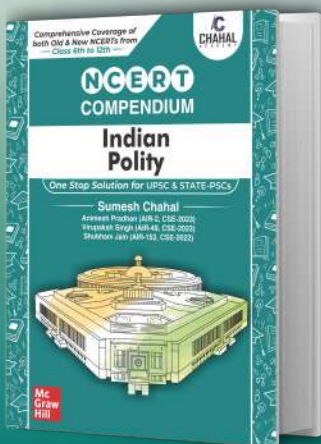
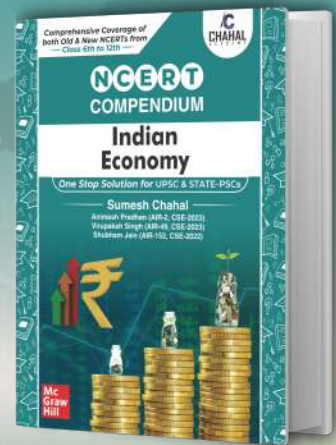
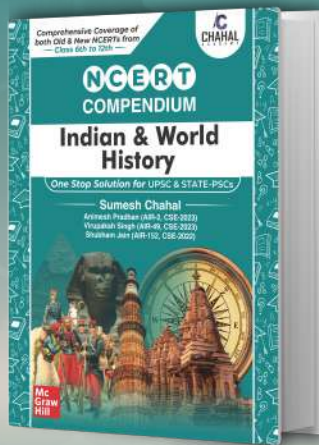
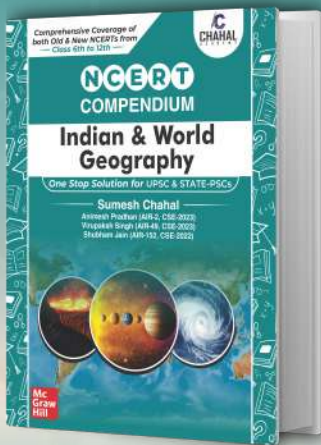
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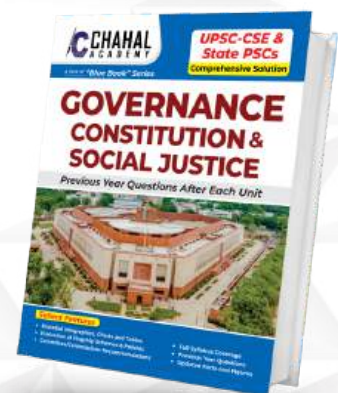
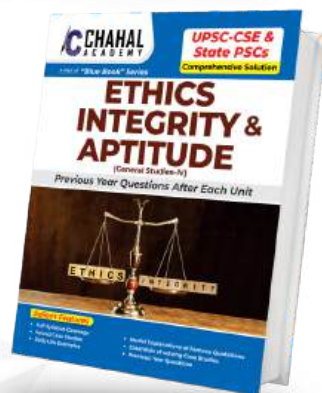
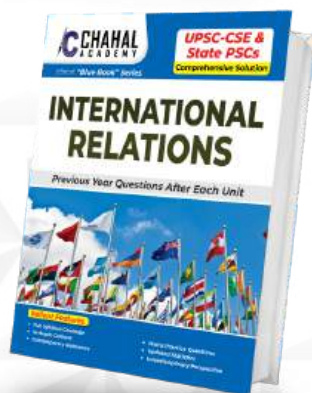
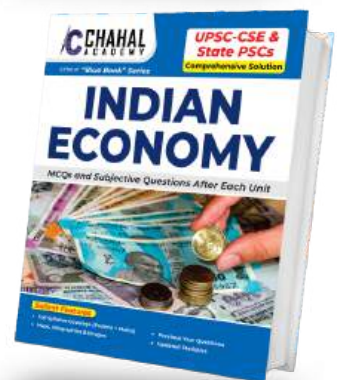
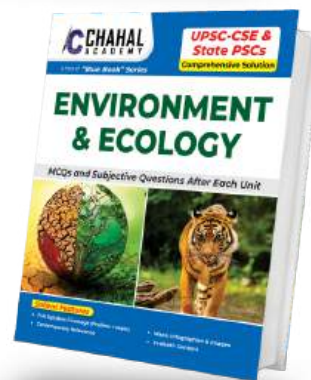
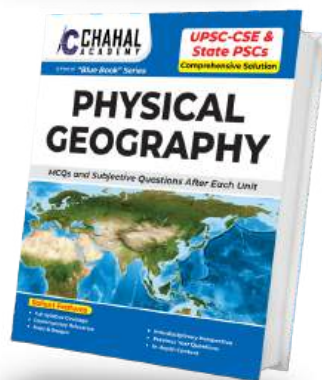
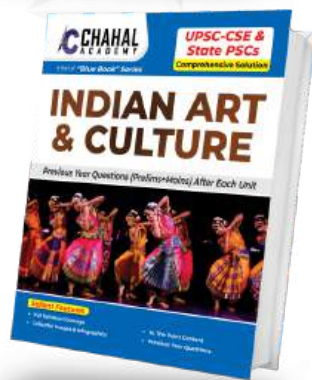
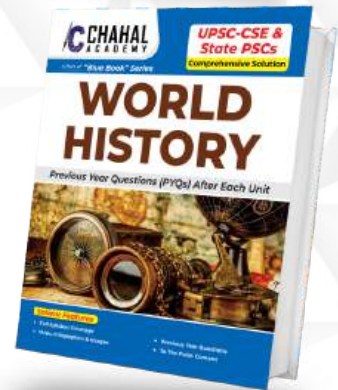
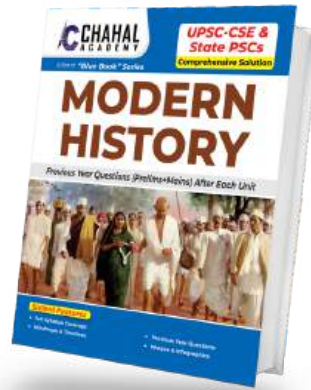
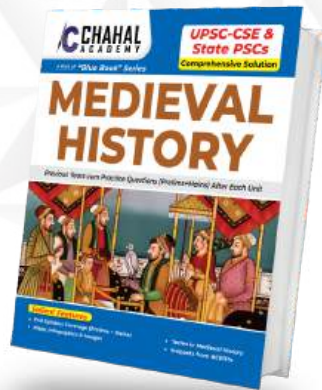
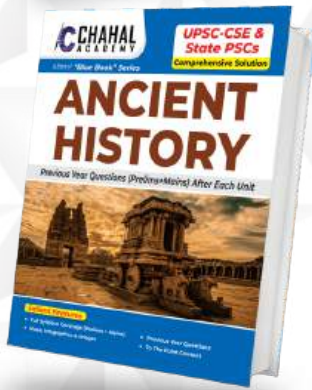
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