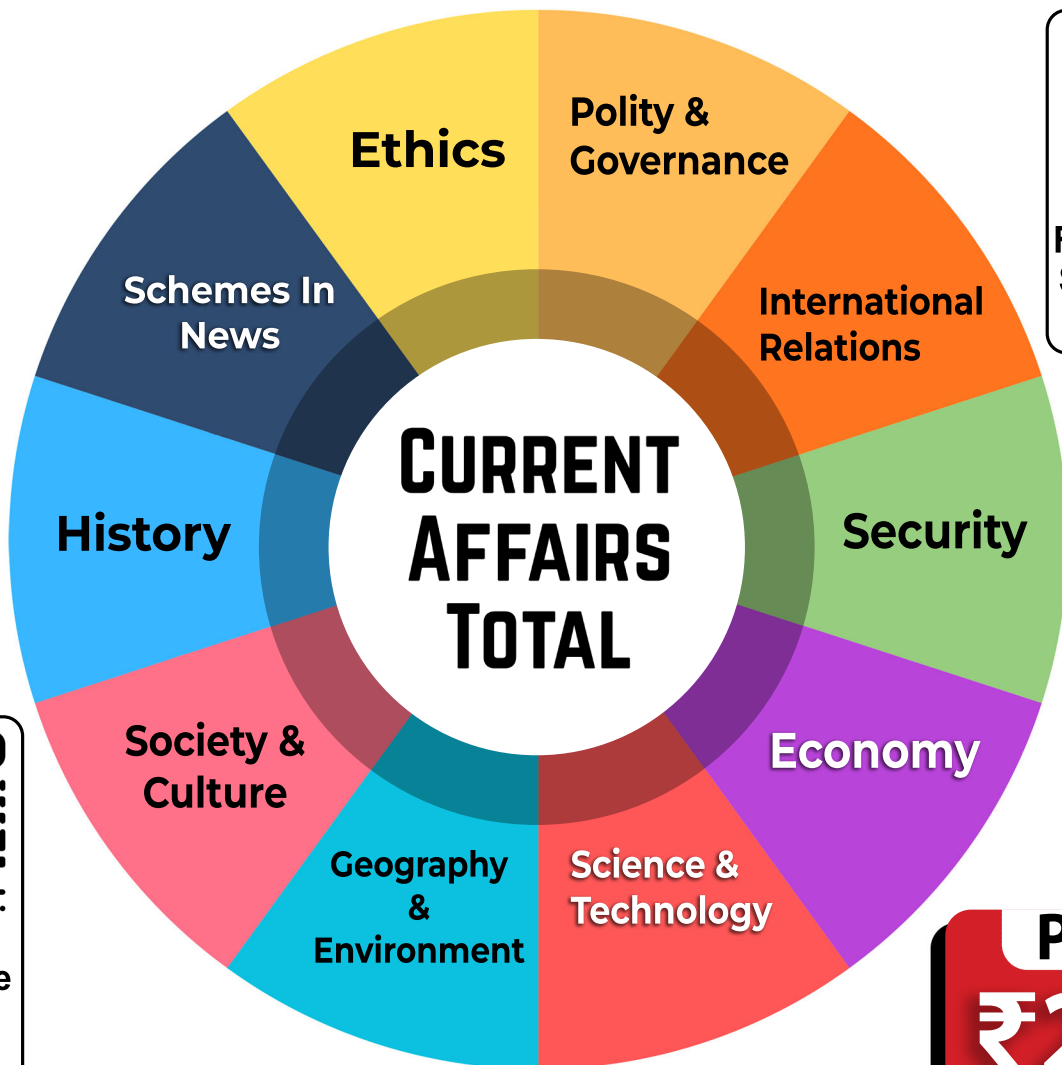




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# POLITY & GOVERNANCE

## 1. Women’s Political Representation in India

### Context

Recent analysis of electoral data highlights a **paradox in Indian democracy**: while **women’s voter participation has increased significantly**, their **political representation in elected bodies remains low**.

### Q1. What is the Status of Women’s Representation in India Across Six Parameters?

- Representation as Voters:** The **male–female voter ratio is almost equal (50:50)** in India.
- Voter Turnout:** In the **1950s**, male voter turnout was significantly higher than female turnout. However, by **2024**, it has been almost equal: **Male turnout = 65.6%** and **Female turnout = 65.8%**.
- Participation in Rallies, Campaigns, and Processions:** Women’s participation in political rallies, campaigns, and processions remains limited with around **9% in 2009** and **16% in 2024**.
- Door-to-Door Campaigning:** Women’s participation in **door-to-door political campaigning** has also increased (from **5% in 2009** to **11% in 2024**) but remains limited.
- Tickets to Contest Elections:** Political parties **do not give many election tickets to women** because they believe that **women have lower chances of winning elections**. However, **there is no empirical evidence supporting this assumption**.
- Winning Elections and Representation in Parliament:** Despite receiving party tickets, **women’s chances of winning elections** remain comparatively **lower**, with representation in Parliament rising only **from 52 members in 1952** to **74 members in 2024** (about **14%**), far short of the **target of 33%** representation.

### Q2. What Are the Reasons for Low Women’s Political Representation in India and What Are the Corresponding Solutions?

Reason	Corresponding Solution
--------	------------------------

<b>1. Birth:</b> Political ambition among women is often lower from the beginning of life.	Encourage the development of political ambition among women from early stages of life.
<b>2. School:</b> Female political literacy is comparatively low.	Improve political literacy among girls during school education.
<b>3. Family:</b> Women carry greater domestic responsibilities such as childbearing and childrearing, and they often require family approval to participate in public activities.	Reduce barriers arising from domestic responsibilities and family restrictions so that women can participate more freely in politics.
<b>4. College:</b> Women’s participation in youth leadership and political leadership at the college level is very limited. Many women prioritize marriage or securing a decent job rather than political leadership.	Increase opportunities for women’s leadership and political participation at the college level.
<b>5. Society:</b> Patriarchal social structures limit women’s social and economic mobility.	Address patriarchal barriers and improve women’s social and economic mobility.
<b>6. Political Parties:</b> Political parties provide fewer opportunities to women because they believe women have lower chances of electoral success.	Political parties should provide greater opportunities and more tickets to women candidates.
<b>7. Political Laws:</b> There is no binding legal provision ensuring at least 33% reservation for women in legislatures.	The <b>Women’s Reservation Bill</b> (Nari Shakti Vandan Adhiniyam) should be <b>passed and implemented</b> to ensure <b>33% reservation</b> for women in the Lok Sabha and State Assemblies.
<b>8. Economic Constraints:</b> Contesting elections requires financial resources & women often face financial limitations.	Address financial barriers so that women can more easily contest elections.



## 2. Appointment of Governor

### Context



In March 2026, the President of India **appointed and reshuffled governors** across several states and Union Territories (like Tamil Nadu, Kerala, West Bengal, Maharashtra, Telangana, Bihar, Nagaland, and Himachal Pradesh).

### About the Governor

1. **Constitutional Provisions:** The office of the Governor is established under **Part VI of the Constitution (Article 153-167)**. **Article 153** states that each state shall have a Governor. One person can also be appointed as **Governor for multiple states simultaneously**.
2. **Role of the Governor:** He acts as a link between the **Centre** and the **State** as he is the **constitutional head of the state executive** and a **representative of the Union Government**.
3. **Appointment:** By President of India based on the aid and advice of the **Council of Ministers headed by the Prime Minister**.
4. **Eligibility Criteria:** According to the **Constitution of India**, a person must be a **citizen of India** and **be at least 35 years of age** to become the Governor. Also, the person must **not be a Member of Parliament or State Legislature**. He must also **not hold any office of profit**. If a **sitting legislator is appointed Governor**, they must **resign from the legislature**.
5. **Tenure: 5 years** (normally). As per the **Constitution of India**, the Governor holds the office **“during the pleasure of the President”**. It means that the Governor can be **removed at any time** before completing the five-year term and **can also be transferred** from one state to another.
6. **Resignation and Removal:**
  - a. **Resignation:** May resign by **submitting a resignation letter to the President of India**.
  - b. **Removal:** Removal occurs when the **President withdraws pleasure**, usually based on the **advice of the Union Council of Ministers**.

### Challenges and Way Forward

Challenges	Way Forward
1. <b>Politicisation of the Governor’s office</b> , with allegations of bias toward the Union government.	Follow <b>Sarkaria Commission</b> recommendation to appoint politically neutral and eminent individuals detached from active politics.

2. <b>Disputes in government formation during hung assemblies.</b>	As suggested by the <b>Punchhi Commission</b> , adopt clear conventions and rely on <b>floor tests</b> to determine majority.
3. <b>Delay in assent to Bills passed by State Legislatures</b> , creating Centre–State friction.	Introduce <b>time-bound procedures for granting assent</b> to ensure smoother legislative functioning.
4. <b>Use of discretionary powers during political crises</b> , such as defections or government formation disputes.	Follow judicial principles laid down by the <b>Supreme Court of India</b> , especially in <b>Shamsher Singh v. State of Punjab</b> and <b>Nabam Rebia v. Deputy Speaker</b> .
5. <b>Centre–State tensions due to the Governor’s dual role</b> as constitutional head of the state and Union representative.	Strengthen <b>cooperative federalism</b> , including consultation with the Chief Minister in appointments as suggested by the <b>Sarkaria Commission</b> .

### Conclusion

The office of the Governor plays an important role in India’s **federal constitutional system**. While the Governor functions as the **constitutional head of the state**, it is essential that the office remains **politically neutral and functions according to constitutional principles**. Ensuring transparency in appointments, respecting democratic mandates, and following constitutional conventions can help **strengthen cooperative federalism in India**.

### 3. SC/ST (Prevention of Atrocities) Act, 1989

#### Context

In 2023, about **57,000 cases of atrocities against Scheduled Castes** were registered, according to the Ministry of Social Justice and Empowerment. This underscores the ongoing importance of the **Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989**, which seeks to safeguard SCs and STs from caste-based violence and discrimination.

#### Q1. What is the SC/ST (Prevention of Atrocities) Act, 1989 and why was it enacted?

It is a **special legislation** designed to **prevent atrocities**



and **discrimination against Scheduled Castes and Scheduled Tribes. Purpose of the Act:**

1. Address **historical oppression and social exclusion** faced by SC/ST communities.
2. Prevent **caste-based violence, humiliation, and exploitation.**
3. Protect the **dignity and rights** of marginalized communities.
4. Ensure **legal protection, speedy justice, and compensation** for victims.

### Q2. What types of offences are covered under the Act?

The Act recognizes several forms of atrocities committed against SC/ST individuals.

1. **Dignity-Based Crimes:** Like forcing a person to eat human waste, public humiliation, verbal abuse, parading a person naked, shaving a person’s head or other degrading acts.
2. **Economic Exploitation:** Like illegal occupation of land belonging to SC/ST individuals or denial of water sources, irrigation, or livelihood resources.
3. **Social Discrimination:** Like denying entry into public places or restricting access to educational institutions or community facilities.
4. **Political Intimidation:** Like forcing SC/ST individuals to vote for a particular candidate or preventing them from participating in political activities.

### Q3. What are the major provisions of the Act?

1. **Applicability:** The Act applies when a **non-SC/ST person commits an offence against a member of the SC/ST community.**
2. **Cognizable and Non-Bailable Offences:** Most offences under the Act are **cognizable and non-bailable**, allowing police to **register cases and arrest the accused without a warrant.**
3. **Investigation by Senior Officers:** Cases must be investigated by a **police officer not below the rank of Deputy Superintendent of Police (DSP).**
4. **Time-Bound Investigation:** Investigations should be **completed within 60 days**, and progress is monitored by the **State Director General of Police (DGP).**
5. **Special Courts:** State governments establish **Special Courts or Exclusive Special Courts** to ensure **speedy trials of atrocity cases.**
6. **Punishment:** Punishments include **imprisonment from 6 months to 5 years with fines** for many offences. **Severe penalties such as life imprisonment**

**or death penalty** in extreme cases depending on the nature of the crime.

7. **Liability of Public Servants:** Public officials who **intentionally neglect complaints or fail to act** may face **imprisonment up to 6 months.**
8. **Legal Support for Victims:** Victims receive **legal assistance** from experienced advocates, **compensation, relief, and rehabilitation support.**

### Q4. What does recent data reveal about atrocities against SC/ST communities?

1. Recent statistics show **continuing incidents of crimes against marginalized communities.**
2. States reporting **high numbers of cases against Scheduled Castes** include **Uttar Pradesh, Rajasthan, Madhya Pradesh, Bihar and Maharashtra.**
3. **Crimes against Scheduled Tribes** were reported significantly in **Manipur**, largely linked to **ethnic violence.**

### Q5. What are the challenges in the implementation of the SC/ST (Prevention of Atrocities) Act, and what measures can improve its effectiveness?

Challenges	Way Forward
1. <b>Underreporting of crimes</b> due to fear, social pressure, or lack of trust in authorities.	Strengthen <b>victim protection mechanisms</b> , encourage reporting, and improve community awareness.
2. <b>Delays in judicial proceedings</b> , which prevent timely justice for victims.	Increase the number of <b>Exclusive Special Courts</b> and ensure <b>time-bound trials.</b>
3. <b>Lack of awareness among victims</b> about legal rights and protections under the Act.	Conduct <b>awareness campaigns and legal literacy programs</b> in vulnerable communities.
4. <b>Weak implementation in some states</b> , including poor investigation and monitoring.	Improve <b>training for police and administrative officials</b> and strengthen monitoring by state governments.
5. <b>Allegations of misuse of the Act</b> in certain cases.	Ensure <b>fair investigation and due process</b> while maintaining strong protections for genuine victims.

### Conclusion

The SC/ST (Prevention of Atrocities) Act, 1989 remains



a crucial legal framework for protecting marginalized communities from caste-based discrimination and violence. Strengthening **effective implementation, awareness, and speedy judicial processes** is essential to ensure **dignity, equality, and social justice for SC/ST communities in India.**

## 4. 8th Central Pay Commission

### Context

The **8th Central Pay Commission (CPC)** is expected to revise salaries of Central Government employees, with likely implementation from **January 2026**, though recommendations may come later.

### Q1. What is the Central Pay Commission (CPC) and what is its role in salary revision?

1. It is a body that **recommends salary, allowances, and pension revisions** for **Union Government employees**. It also covers **retired employees**, meaning pensions are revised as well.
2. It does **not apply** to state government employees, private sector employees and Public Sector Undertakings (PSUs).
3. The government usually **accepts CPC recommendations** and implements them.

### Q2. What are the main components of a government salary?

1. A government salary consists of **Basic Pay** (core component), **Dearness Allowance (DA)** (adjusted with inflation), **House Rent Allowance (HRA)**, **Travel and other allowances**.
2. DA is revised **every few months** based on inflation.
3. Basic Pay is revised **mainly via Pay Commission recommendations (roughly every 10 years)**.

### Q3. When will 8th Pay Commission be implemented and how does retrospective effect work?

1. The last revision (7th CPC) was implemented from **January 2016**.
2. The next revision is expected from **January 2026** (10-year gap).
3. However, 8th CPC was formed in **November 2025 & recommendations** may come till **April 2027**.
4. **Retrospective effect:**
  - a. Salary revision will apply from **January 2026**, even if implemented later.
  - b. Employees receive **arrears (past dues)** as lump

sum.

- c. Example: If salary increases later, the past difference is paid together after tax deduction.

### Q4. What is the composition of the Central Pay Commission?

1. It generally consists of **3 members**: one Chairperson, one Part-time Member, and one Member-Secretary (serving as both Member and Secretary)
2. It **conducts research** and **submits recommendations** to the government.

### Q5. What factors does the CPC consider while recommending salary increases?

1. **Economic condition of the country:** CPC examines the current state of India's economy to assess whether salary increases are financially feasible.
2. **Fiscal prudence (financial sustainability):** CPC ensures that salary hikes do not overburden government finances and remain within the limits of what the budget can sustain.
3. **Unfunded pension liabilities:** CPC considers future pension obligations, especially where employees have not contributed, to avoid excessive long-term financial burden on government.
4. **Existing salary structure (with comparison):** CPC analyses current pay levels and compares them with private sector salaries and inflation trends to ensure fairness and competitiveness.

### Q6. What are “unfunded pension liabilities” in the context of pensions?

1. In some pension systems, employees **do not contribute** during service.
2. The government still has to pay pensions in future.
3. These future obligations are called **unfunded liabilities**.
4. Higher salaries today → higher pension burden tomorrow.

### Q7. What is the “Fitment Factor” and how does it affect salary?

1. Fitment factor is a **multiplier used to revise Basic Pay**.
2. Formula:  $\text{New Basic Pay} = \text{Old Basic Pay} \times \text{Fitment Factor}$
3. **Example:** Fitment factor = 2 → Basic Pay doubles
4. In **7th CPC**, fitment factor was **2.57**.

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- For the **8th CPC**, it is **not yet decided** (expected range is debated).
- It increases **only Basic Pay**, not total salary proportionally.

### Q8. What is the “Compression Ratio” in salary structure?

- It shows the **gap between highest and lowest salaries** in government.
- Top salary ÷ lowest salary = compression ratio
- Indicates **income inequality within government hierarchy**.

### Q9. What are the expectations and debates regarding the 8th CPC?

- Some expect a **low fitment factor (1.8–2)** due to fiscal pressure.
- Others expect a **higher increase (2.5–3 or more)**.
- The final decision will depend on economic conditions and government finances.

### Conclusion

The Central Pay Commission plays a key role in balancing **salary revision, fiscal discipline, and economic realities**, ensuring fair compensation while maintaining financial stability.

## 5. Passive Euthanasia in India

### Context

The **Supreme Court of India** permitted the **withdrawal of life-sustaining treatment for Harish Rana**, a man who had remained in a persistent vegetative state since 2013 following severe head injuries. This decision marks a significant application of India’s evolving **passive euthanasia framework**, emphasising dignity and compassionate end-of-life care.

### Q1. What is passive euthanasia, and how does it differ from active euthanasia in legal, ethical, and medical terms?

- Passive euthanasia** refers to withdrawing or withholding medical treatment that artificially prolongs life. It allows the underlying illness or injury to **take its natural course without further medical intervention**.
- It may involve withdrawal of ventilator support or stopping artificial nutrition or hydration.

- Active euthanasia**, in contrast, involves deliberately causing death through medical means such as lethal injections. In India, active euthanasia is **illegal and treated as a criminal offence**.
- Passive euthanasia is considered different because it **does not intentionally cause death but allows natural death to occur**.

### Q2. What were the circumstances and judicial reasoning behind the Supreme Court’s decision permitting withdrawal of life-sustaining treatment in the Harish Rana case?

- Harish Rana had remained in a **persistent vegetative state since 2013 after a severe head injury**.
- His family requested withdrawal of life support, but the Delhi High Court rejected the plea, saying he was not terminally ill.
- The Supreme Court reviewed the case after **medical evaluations by expert committees** which confirmed his condition was irreversible with no chance of recovery.
- The Court emphasised that the decision was about **avoiding artificial prolongation of suffering**.
- It directed AIIMS to provide **palliative care to ensure comfort & dignity in the final stage of life**.

### Q3. What is the constitutional basis for passive euthanasia in India, and how has Article 21 been interpreted in relation to the right to die with dignity?

- Article 21 (Right to life and personal liberty)** has been interpreted by **Supreme Court** to include **right to live with dignity** which also includes **respecting patient autonomy & medical realities**.
- Patients suffering from irreversible conditions may choose to **refuse invasive or futile treatment**.
- Passive euthanasia prevents unnecessary prolongation of suffering and thus, is seen as consistent with the **constitutional principle of human dignity**.

### Q4. How has the Indian legal framework on euthanasia evolved through major Supreme Court judgments?

- India currently lacks a dedicated parliamentary law governing euthanasia. The legal framework has largely developed through **judicial interpretations and constitutional rulings**.
- Early judgments clarified that **active euthanasia remains illegal under criminal law**.
- Subsequent rulings recognised the possibility of

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**withdrawing life-sustaining treatment in limited situations.**

4. Courts have introduced procedural safeguards to prevent **misuse of euthanasia provisions.**

### Q5. What were the key principles and safeguards laid down in the Aruna Shanbaug judgment (2011) regarding passive euthanasia?

1. The **Aruna Shanbaug case (2011)** laid the foundation for passive euthanasia in India.
2. It recognised that withdrawal of life-support could be allowed under **strict supervision.**
3. Requests for passive euthanasia could be made by family members, doctors or a “next friend” acting in the patient’s best interest.
4. The High Court was required to review each case individually.
5. Medical evaluation by a **committee of expert doctors** was mandatory.
6. These safeguards aimed to ensure decisions were made **carefully and ethically.**

### Q6. How did the Common Cause judgment (2018) recognise advance directives and expand the concept of dignified end-of-life care?

1. In **Common Cause v. Union of India (2018)**, the Court declared that **the right to die with dignity is part of Article 21** and introduced the concept of **Advance Medical Directives (Living Wills).**
2. A living will allows individuals to specify in advance whether they want life-support treatment and the conditions under which treatment should be withdrawn.
3. It ensures that individuals’ wishes are respected **even if they later become incapable of communicating them.**

### Q7. What procedural reforms were introduced by the Supreme Court in 2023 to simplify the implementation of passive euthanasia?

1. The Court simplified rules governing **Advance Medical Directives.**
2. Living wills can now be **attested by a notary or gazetted officer.**
3. Advance directives may be stored in **digital health records for easier access.**
4. Hospitals must form **two medical boards to assess the patient’s condition.**

5. Administrative hurdles such as mandatory magistrate visits were removed.
6. These reforms aimed to ensure **faster & more practical implementation of end-of-life decisions.**

### Conclusion

India’s evolving approach to passive euthanasia reflects an effort to reconcile **medical ethics, constitutional principles, and human compassion.** The Supreme Court’s rulings emphasise that preserving dignity is central to the right to life, especially when recovery is impossible. Developing a clear legal framework for **end-of-life care and patient autonomy** remains an important step for the future of India’s healthcare system.

## 6. Sixth Schedule and Autonomous District Councils (ADCs)

### Context

Elections to the **Garo Hills Autonomous District Council** established under the **Sixth Schedule**, in **Meghalaya** were recently postponed due to violent clashes between the **Garo tribe and Bengali-speaking Muslims** in the region.

### Q1. What is the Sixth Schedule of the Constitution?

1. The **Sixth Schedule** of the Indian Constitution provides **special administrative arrangements for tribal areas in certain northeastern states** through **Autonomous District Councils (ADCs).**
2. These provisions aim to:
  - a. protect **tribal identity, customs, and traditional institutions**
  - b. provide **self-governance to tribal communities**
  - c. ensure **administrative autonomy within the Indian federal system**
3. **Constitutional Provisions**
  - a. **Article 244(2)** – provides for administration of tribal areas through the Sixth Schedule.
  - b. **Article 275** – allows **grants-in-aid from the Consolidated Fund of India** to support development in these areas.

### Q2. Which states are covered under the Sixth Schedule?

1. The Sixth Schedule applies to **four northeastern states:**
  - a. Assam
  - b. Meghalaya

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- c. Tripura
  - d. Mizoram
2. These regions receive **greater administrative autonomy** to safeguard tribal culture and traditional governance systems.

**Q3. What are Autonomous District Councils (ADCs)?**

1. The Sixth Schedule operates through **Autonomous District Councils and Regional Councils**, which function as **local self-governing bodies in tribal areas**.
2. **Composition of ADCs**
  - a. Total members: **30**
  - b. **26 elected members** (through adult franchise)
  - c. **4 nominated members** appointed by the Governor
  - d. **Term: 5 years**
3. **Exception:** The **Bodoland Territorial Council in Assam** has **46 members**.

**Q4. What is the role of the Governor in the functioning of ADCs?**

1. The Governor has an important supervisory role over ADCs.
2. Major powers include:
  - a. Defining or modifying **boundaries of Autonomous District Councils**
  - b. Reviewing ADC administration through **committees**
  - c. **Dissolving councils** based on committee recommendations
  - d. Granting **assent to laws passed by ADCs**
3. Thus, although ADCs enjoy autonomy, **their decisions require approval from the Governor**.

**Q5. How many Autonomous District Councils exist under the Sixth Schedule?**

There are **10 Autonomous District Councils in Northeast India**.

1. **Assam – 3 Councils:** Bodoland Territorial Council, Karbi Anglong Autonomous District Council and Dima Hasao Autonomous District Council.
2. **Meghalaya – 3 Councils:** Garo Hills Autonomous District Council, Khasi Hills Autonomous District Council and Jaintia Hills Autonomous District Council.
3. **Tripura – 1 Council:** Tripura Tribal Areas Autonomous District Council

4. **Mizoram – 3 Councils:** Chakma Autonomous District Council, Lai Autonomous District Council and Mara Autonomous District Council.

**Q6. What powers do Autonomous District Councils possess?**

ADCs exercise **legislative, judicial, and financial powers** within their jurisdiction.

1. **Legislative Powers:** ADCs hold legislative authority over land use, non-reserved forests, shifting cultivation, inheritance, marriage, divorce, and social customs, but their laws need the Governor’s approval.
2. **Judicial Powers:** ADCs have judicial authority to set up village courts and councils for cases among Scheduled Tribe members, but they cannot handle offences involving the death penalty or imprisonment beyond five years, which fall under regular courts.
3. **Financial Powers:** ADCs have financial authority to levy taxes on land, professions, trades, animals, and vehicles, while also receiving Union government grants under Article 275.

**Q7. How does the Sixth Schedule differ from the Fifth Schedule?**

Feature	Fifth Schedule	Sixth Schedule
<b>1. Areas covered</b>	10 states with tribal populations	4 northeastern states
<b>2. Governance body</b>	Tribal Advisory Council	Autonomous District Council
<b>3. Nature of powers</b>	Mainly advisory	Legislative and executive powers
<b>4. Application of laws</b>	Central and state laws apply unless modified by Governor	Central/state laws apply only if approved
<b>5. Level of autonomy</b>	Limited autonomy	Greater autonomy

**Q8. What challenges do Autonomous District Councils face and what steps can improve their functioning?**

Challenges	Possible Solutions / Way Forward
<b>1. Ethnic tensions and inter-community conflicts</b> in tribal regions sometimes lead to violence and disrupt governance.	Encourage <b>inclusive dialogue, peace-building measures, and conflict resolution mechanisms</b> among different communities.



<b>2. Overlap of powers between State Governments and ADCs</b> creates administrative confusion and delays in decision-making.	Clearly define legislative and administrative jurisdictions between states and ADCs to avoid conflicts.
<b>3. Limited financial autonomy</b> restricts the ability of councils to implement development programmes effectively.	Provide greater financial support and stronger revenue-raising powers to ADCs.
<b>4. Weak institutional &amp; administrative capacity</b> in some councils affects governance efficiency.	Strengthen institutional capacity through training, better administration, & improved governance systems.
<b>5. Political instability and election delays</b> sometimes affect the democratic functioning of councils.	Ensure regular and transparent elections with stronger electoral management mechanisms.

### Conclusion

The **Sixth Schedule** represents an important model of **asymmetric federalism in India**, providing tribal communities with a degree of self-governance while remaining within the national framework. Strengthening **Autonomous District Councils** is crucial for protecting tribal rights and ensuring stable governance in Northeast India.



## 7. Compulsory Voting in India

### Context

The debate on **compulsory voting** has resurfaced due to a **decline in voter turnout** (65.79% in 2024 Lok Sabha elections vs 67.4% in 2019), raising concerns about **quality of participatory democracy in India**.

#### Q1. What is Compulsory Voting?

It is a system where citizens are **legally required to vote** with the aim to **increase voter participation** and **strengthen democracy**. **Non-compliance** can attract **fines/ penalties** or **denial of certain public services**.

#### Q2. What is the legal position of voting in India?

- Article 326** provides **universal adult suffrage (18+)**.
- However, the **Supreme Court** has clarified that the **right to vote is a statutory right**, not a fundamental right.
- It is governed by **Representation of the People Act 1950** (Defines voter eligibility) and **Representation of the People Act 1951** (Provides the right to vote).

- Also linked to **Article 19**, which includes the **right NOT to vote**.

#### Q3. Why is compulsory voting suggested?

- Low voter turnout** can weaken democratic legitimacy.
- Higher participation** ensures more representative governance and greater accountability of elected representatives.

#### Q4. What is the global scenario?

- Some countries have compulsory voting:
  - Australia** → fines for non-voting
  - Brazil, Argentina** → penalties
  - Peru** → denial of services
- These countries report **high voter turnout (80–90%)**.

#### Q5. Why is compulsory voting not feasible in India and what can be the better alternatives?

##### Institutional Views:

- Dinesh Goswami Committee (1990)** → Opposed due to practical difficulties in implementation.
- Law Commission (255th Report, 2015)** → Not recommended as increased voter participation will be due to penalties for not voting.

Challenges (Why Not Feasible)	Way Forward (Better Alternatives)
1. Violates freedom of expression (right not to vote)	Promote voter awareness and civic responsibility
2. Difficult to enforce in a large & diverse population	Use digital campaigns and social media outreach
3. Harsh penalties (fines/denial of services) are impractical	Encourage voluntary participation instead of coercion
4. Administrative burden in tracking compliance	Strengthen Election Commission outreach mechanisms
5. Migrant workers face difficulty in accessing polling stations	Provide remote voting options, transport, & paid leave
6. May lead to forced or uninformed voting	Build political awareness from school and college level

### Conclusion

While compulsory voting may raise turnout, it is **not suitable for India's constitutional and democratic framework**. The focus should be on **awareness**,



accessibility, and electoral reforms to ensure meaningful and voluntary participation.

## 8. SC Status after Religious Conversion (Completely Explained)

### Context

The Supreme Court has ruled that a person who converts to Christianity cannot claim Scheduled Caste (SC) status or protections. The judgment highlights the tension between constitutional definitions of caste identity and the social reality of continued caste-based discrimination after conversion.

### Q1. What did the Supreme Court rule on SC status after conversion?

1. A person cannot simultaneously profess a non-Hindu/Sikh/Buddhist religion and claim Scheduled Caste status.
2. The bar is **absolute** (no exceptions) and **immediate** (status ends upon conversion).
3. **Court’s reasoning:** SC identity and religious identity are **mutually exclusive** under law. Conversion leads to **loss of legal SC status instantly**.

### Q2. What is the constitutional and legal basis of this rule?

1. **Article 341:** Empowers President to notify SC communities
2. **Article 366(24):** Defines SCs based on Article 341 notifications
3. **Constitution (Scheduled Castes) Order, 1950:** Restricts SC status to Hindus, Sikhs and Buddhists.
4. **Key provision:** Persons professing other religions are **excluded from SC category**
5. **SC/ST Act:** Adopts same definition → protections apply only to legally recognised SCs

### Q3. What does “professing a religion” mean legally?

1. Not just private belief.
2. Requires public declaration and visible practice of faith.
3. **Example from case:** Acting as a pastor (leading prayers) = clear evidence of professing Christianity.

### Q4. How is SC status different from ST status in this context?

Basis	Scheduled Castes (SC)	Scheduled Tribes (ST)
<b>Key Criterion</b>	Religion-linked	Community-linked
<b>Effect of Conversion</b>	SC status lost	ST status may continue
<b>Determining Factor</b>	Religion professed	Social customs & recognition

ST identity depends on cultural continuity and community acceptance.

### Q5. What was the case behind this ruling?

1. Case: **Pastor Chintada Anand Paul vs State**
2. The complainant alleged caste-based abuse and a case was filed under SC/ST Act.
3. **Defence argument:** Complainant had converted to Christianity, was functioning as a pastor and therefore, was not eligible for SC protections.
4. **Outcome:** Andhra Pradesh High Court quashed the case. Supreme Court upheld the decision.

### Q6. What are the key legal principles established?

1. SC status is **religion-dependent** and not merely caste-origin based.
2. Conversion leads to loss of **legal identity as SC** and loss of **statutory protections**.
3. Protective laws (**like SC/ST Act**) apply only to legally recognised SC members.

### Q7. What are the key concerns and debates?

1. **Social Reality vs Legal Framework:** Evidence shows that caste discrimination persists even after conversion but the law does not recognise this continuation.
2. **Equality Concerns:** Converts may lose reservation benefits and legal protections.
3. **Constitutional Debate:** Whether SC status should be religion-linked (current system) or discrimination-linked (proposed view).
4. **Policy Debate:** Demand to extend SC status to dalit Christians and dalit Muslims.

### Q8. What safeguards or reforms are being discussed?

1. **Policy Review:** Reconsider religion-based restriction
2. **Data-Based Approach:** Study discrimination patterns post-conversion
3. **Legal Reform:** Possible amendment to 1950 Order
4. **Alternative Protection Mechanisms:** Extend anti-discrimination protections beyond SC status



## Conclusion

The Supreme Court's ruling reaffirms the existing constitutional framework that ties SC status to religion. However, it also highlights a deeper governance challenge — reconciling **legal definitions with social realities of caste discrimination**, requiring careful policy and constitutional deliberation.

## 9. Women in Armed Forces: Permanent Commission & Equality

### Context

The Supreme Court has upheld **Permanent Commission (PC) and pensionary benefits for women officers** in the Armed Forces, highlighting entrenched **systemic gender bias**. The judgment reinforces constitutional guarantees of equality and mandates institutional reform.

### Q1. What is the issue of the Permanent Commission for women officers?

1. Women inducted mainly through **Short Service Commission (SSC)**
2. SSC tenure is limited (10–14 years) and guarantees no assured long-term career.
3. **Permanent Commission (PC)** offers full career till retirement and access to promotions, command roles, and pension.
4. **Historical issue:** Women had **restricted or delayed access** to PC which led to structural inequality in career progression.

### Q2. What systemic challenges did women officers face?

1. **Career Limitations:** Restricted access to command roles and fewer opportunities for promotions.
2. **Training & Exposure Gaps:** Weaker service profiles with denied key courses and assignments.
3. **Institutional Bias:** Presumption that women lack long-term career commitment
4. **Evaluation Discrimination:** Lower grading in performance reports

### Q3. What flaws did the Court identify in the evaluation system?

1. **Annual Confidential Reports (ACRs) Bias:** Women are often given average or lower grades and higher grades are informally reserved for male officers.
2. **Structural Disadvantage:** Women are assessed using weaker service records (due to fewer opportunities).
3. **Result:** Reduced chances of selection for Permanent Commission

### Q4. What were the key directions of the Supreme Court?

1. **Grant of Permanent Commission:** Eligible women officers must be considered for PC as inclusion in the consideration zone is a **constitutional obligation**.
2. **Pensionary Benefits:** Women denied PC but released will be deemed to have completed **20 years of service** and will be eligible for pension and benefits.
3. **No Vacancy-Based Denial:** Vacancy caps cannot justify discrimination. Equality overrides administrative constraints.
4. **Uniform Application:** Applies across Army, Navy and Air Force.

### Q5. What constitutional principles were reinforced?

1. **Article 14 (Equality before Law):** Gender-based discrimination is invalid.
2. **Article 16 (Equal Opportunity in Employment):** Equal access to career advancement
3. **Substantive Equality:** Focus on removing structural disadvantages, not just formal equality.

### Q6. What are the broader implications of the judgment?

1. **Institutional Reform:** Need to reform ACR evaluation systems and ensure fair promotions & postings.
2. **Gender Inclusion:** It expands the role of women in the Armed Forces and encourages participation in leadership positions.
3. **Governance Impact:** Promotes merit-based system and reduces institutional bias.
4. **Precedential Value:** Strengthens jurisprudence on gender equality and workplace discrimination.

### Q7. What challenges remain?

1. **Cultural Resistance:** Deep-rooted gender stereotypes
2. **Operational Concerns:** Debate on combat roles and logistics
3. **Implementation Issues:** Translating judgment into ground-level reform

### Conclusion

The Supreme Court's ruling marks a significant step toward **substantive gender equality in the Armed Forces**. By addressing structural bias and ensuring equal opportunities, it aligns institutional practices with constitutional values, though effective implementation remains crucial.





## INTERNATIONAL RELATIONS

### 1. India-France DTAA Amendment, 2026

#### Q1. What is Double Taxation Avoidance Agreement (DTAA)?

1. A **Double Taxation Avoidance Agreement (DTAA)** is an agreement between two countries to **avoid taxing the same income twice**.
2. **Problem of Double Taxation:** For example: If a resident of India earns income in the United States, the US taxes it as the source country while India taxes it again as the resident country. Thus, the **same income gets taxed twice**.
3. **Purpose of DTAA:** DTAA is signed between countries to ensure the income is **taxed only once**, or a **specific sharing arrangement of tax** is decided between the countries.
4. This prevents **double tax burden on individuals and companies**.

#### Q2. What is Treaty Shopping and why is it considered problematic?

1. Different countries have **different tax rates**. For example: Some countries have **high tax rates** (30-40%). Some countries have **very low tax rates or zero tax**, which are often called **tax havens**.
2. Sometimes companies misuse tax treaties through a practice called **Treaty Shopping**.
3. Treaty shopping occurs when a company earns profits in **one country**, but **artificially shifts the profits to another country with lower taxes**.
4. Example: A company earns profits in **India**, where tax rates are higher. But it **shows those profits in a country like Mauritius**, where taxes are lower. This is done **only to obtain tax benefits**, even though **real business activity is not conducted there**.
5. **Problem:** Such practices reduce tax revenue for the country where income is actually generated. Ideally, **tax should be paid in the country where the income is generated**.

#### Q3. What is the Principal Purpose Test (PPT) and Base Erosion and Profit Shifting (BEPS)?

1. **Principal Purpose Test (PPT):** It examines the **main purpose of a transaction or arrangement**. It checks

whether the **main objective was genuine business activity**, or whether the **main purpose was only to save taxes**. If it is found that the **primary purpose was tax avoidance**, action can be taken against the entity.

2. **Base Erosion and Profit Shifting (BEPS):** The concept was introduced globally to address tax avoidance. It refers to a situation where companies **shift profits from high-tax countries to low-tax countries**. This **reduces the taxable income (tax base)** in the high-tax country. Thus, companies **artificially reduce tax liabilities** which BEPS aims to prevent.
3. In **2017**, the **Multi-Lateral Instrument (MLI)** was introduced under the BEPS framework. If countries **ratify the MLI**, their bilateral tax treaties are **automatically modified** in line with BEPS provisions to prevent treaty abuse such as profit shifting and treaty shopping.

#### Q4. What is the background of the India-France DTAA and the MFN issue?

1. India and France signed the India-France Double Taxation Avoidance Agreement in 1992.
2. The agreement also included the Most Favoured Nation Clause (MFN).
3. **MFN Concept:** MFN can be understood as a “best friend discount.” If India gives a lower tax rate to another country in a later treaty, then France can claim same lower rate under MFN clause.
4. **Issue:** Later, India signed tax treaties with other countries and gave lower tax rates. France argued that because it has MFN status, the same reduced tax rate should automatically apply to France as well. This led to repeated disputes and litigation involving French companies in India.
5. **Supreme Court Judgement (2023):** In the Nestlé case, the Supreme Court of India held that MFN benefits are not automatic. MFN will apply only if the Government of India issues a specific notification for that country.

#### Q5. What are the 6 major changes introduced in the India-France DTAA Amendments 2026?

**2026 Development:** In 2026, India and France signed an amendment protocol to the DTAA. It will become effective after ratification by the parliaments of both countries.



**1. Capital Gain Tax:**

Earlier Provision
1. If a French investor who invested in an Indian Company sold its shares, capital gains arise in India since it is the source country. However, <b>India's taxing rights were limited.</b> 2. India could tax these gains only when the investor's shareholding was above 10%; if it was below 10%, India had no capital gains taxing rights. 3. Investors often <b>kept shareholding below 10% to avoid tax in India (loophole).</b>
After Amendment
1. The <b>source country (India) now has full taxing rights on capital gains.</b> 2. Taxation will <b>not depend on the percentage of shareholding</b> (can be less or more than 10%).

**2. Most Favoured Nation Clause (MFN):**

Earlier Provision
1. It existed in the <b>India-France DTAA signed in 1992 &amp; remained in effect for about 34 years (1992-2026).</b> 2. But, it created confusions and disputes, leading to repeated litigations and court cases. It also led to <b>reduced clarity, trust, and certainty in taxation rules</b> , which could negatively affect investment.
After Amendment
1. It <b>has been removed from the India-France DTAA.</b> 2. This will reduce confusion and litigation, bringing <b>greater clarity and certainty in taxation between India and France.</b>

**3. Dividend Tax:**

Earlier Provision (1992-2026)
1. A <b>single flat tax rate of 10%</b> applied to dividends. 2. If a company or investor received <b>dividend income from India to France or from France to India</b> , a <b>10% tax</b> was levied on the dividend amount.
After Amendment
1. The <b>single flat tax rate has been replaced with a split tax structure.</b> 2. <b>New Dividend Tax Rates: 5% tax</b> if the shareholding is more than 10% (large investors). <b>15% tax</b> if the shareholding is less than 10% (smaller investors). (Tax is reduced for large investors and increased for smaller investors)

**4. Fee on Technical Service (FTS) and Permanent Establishment (PE)**

- a. **Fees for Technical Services (FTS)** refers to payments for managerial, technical, or consultancy services provided by a company from one country to another.
- b. **Permanent Establishment (PE)** refers to a physical or business presence of a foreign company in another country, such as an office, through which it earns income.
- c. **Meaning of "Make Available"**: If France provides a service to India, the technical knowledge or skill should remain with India. India should be able to use that knowledge independently in the future, without needing to call France again for the same service.

Earlier Provision
1. <b>FTS definition</b> was broad as it included services without the "make available" condition. 2. <b>FTS income</b> was <b>taxed on the gross amount</b> (e.g., about 10%). 3. <b>PE definition</b> was <b>narrower</b> , where physical establishment was important to create a PE.
After Amendment
1. <b>Income Reclassification</b> : The FTS definition has been updated to align with the India-US DTAA. Now FTS applies only when technical knowledge is "made available." 2. <b>Expansion of Permanent Establishment (PE)</b> : The PE definition has been expanded, similar to the India-US DTAA. Even without a physical establishment, PE may arise if services are provided for more than 183 days. 3. <b>Tax Implication</b> : Many incomes earlier classified as FTS are now treated as PE income. Tax will be applied on profit rather than on the gross amount. 4. The change <b>encourages more permanent economic presence</b> in India. It may lead to more infrastructure development, greater job creation, higher technology transfer and long-term investment between India and France.

**5. BEPS and MLI:**

- a. The concepts have now been **explicitly incorporated into the India-France DTAA**
- b. These provisions aim to **prevent tax avoidance practices such as profit shifting and treaty**



**shopping.**

- c. Business arrangements between India and France should be based on **genuine economic activity**, not primarily for **saving taxes**.
- 6. The amendment provides for **seamless and continuous exchange of information** between **India and France**.

**Q6. What are the overall benefits of the 2026 amendment to the India-France DTAA?**

1. **Increase in Source-Based Taxation:** The country where the income is generated (source country) will have stronger taxing rights.
2. **Prevention of Profit Shifting:** With the explicit inclusion of **Base Erosion and Profit Shifting (BEPS)** provisions, companies will find it difficult to **shift profits to tax havens just to reduce tax liability**.
3. **Reduction in Tax Uncertainty:** Earlier, the **Most Favoured Nation Clause (MFN)** created **confusion and uncertainty in tax interpretation**. After its removal, **greater clarity and certainty in taxation rules** will emerge.
4. **Increase in Investment and Technology Transfer:** Clearer taxation rules and stronger **permanent establishment provisions** may encourage **greater investment between India and France**. This may also lead to **higher technology transfer and economic cooperation**.
5. **Reduction in Litigation:** With clearer treaty provisions and removal of MFN-related disputes, **tax-related litigation between companies and governments is likely to decrease**.

**2. USA’s Section 301 Probe Against India**

**Q1. What is the trade structure between India and the United States and why did the US earlier allow lower tariffs on India?**

1. **Trade Structure between India and the US:** India exports goods worth **about \$90 bn** to the US while the US exports goods worth **about \$45 bn** to India. **Total bilateral trade = \$135 bn**.
2. As **Indian exports > US exports**, **India has a trade surplus** (US - trade deficit) of \$45 bn.
3. Earlier, the US imposed **lower taxes on Indian products**, while **India imposed higher taxes on American products**. This contributed to the US trade

deficit and lower tax collection for the United States.

- 4. However, the United States accepted this situation because of its **strategic interests** (which were more important than economic interests), which included countering **China’s influence**, gaining **access to Indian markets** and building **alliances in the Indo-Pacific region**.

**Q2. What legal mechanisms does US have to address trade deficits & unfair trade practices?**

The US has two important laws that allow it to impose economic measures:

International Emergency Economic Powers Act (IEEPA), 1977	Trade Act of 1974 (Sections 301–310)
1. It allows the <b>President of the United States</b> to exercise economic powers during an emergency.	1. It provides a legal framework for the <b>Office of the United States Trade Representative (USTR)</b> to address <b>unfair trade practices</b> .
2. It allows <b>broad economic sanctions</b> .	2. The law allows <b>specific economic sanctions</b> and <b>tariff measures</b> .
3. Measures can be implemented <b>quickly because they are linked to emergency situations</b> .	3. The process involves <b>proper hearings and public comments</b> before action is taken.
4. No tariff involvement there	4. <b>Tariff Involvement</b> there.



**Q3. What major events occurred between 2024 and early 2026 in US-India trade policy?**

1. **November 2024:** After **Donald Trump** was re-elected as **President of the US**, the administration adopted an **aggressive tariff policy** targeting several countries such as China, India, Mexico, and Canada in order to reduce the US trade deficit.
2. **February 2025:** The US invoked **IEEPA** and imposed tariffs on several countries including India. For India - **25% reciprocal tariff**, and **25% additional tariff because India imported oil from Russia**. This resulted in a **total tariff of 50% on certain imports from India**.
3. **May 2025:** A case was filed in **US Federal Court** challenging the use of **IEEPA** for tariff imposition. The argument stated that **IEEPA only allows sanctions and does not authorize taxation or tariffs**. The court accepted the case.



- January 2026:** A **framework trade deal between India and the United States** was announced, although it was **not finalized**. The proposal included reducing tariffs from **50% to 18%**, and increasing bilateral trade from **135 billion dollars to 500 billion dollars** over 5 years.
- February 2026:** The **Federal Court ruled that IEEPA does not authorize tariffs**. Therefore, the Trump administration **had to terminate the tariffs imposed under IEEPA**. After this decision, the administration introduced a **10% import surcharge under Section 122 of the Trade Act of 1974**.

#### Q4. What is the Section 301 investigation started in March 2026?

- In **March 2026**, the USTR initiated a **Section 301 investigation** under the **Trade Act of 1974 (Sections 301–310)** against several countries including India.
- Aim:** To determine whether countries trading with the US are engaging in **unfair trade practices**.
- The investigation specifically examines whether countries are **deliberately subsidizing manufacturing sectors** and **increasing production capacity** mainly to export products rather than meet domestic demand.

#### Q5. Which sectors in India are being examined in the investigation and why?

- The investigation has identified several sectors in India where manufacturing capacity has increased significantly. These sectors include: **Solar modules, Petrochemicals, Steel and Textiles**.
- According to the investigation, India may have **deliberately increased manufacturing capacity to export goods to the US**.
- In some sectors, manufacturing capacity is estimated to be **about 3 times higher** than domestic demand.
- This situation is described as **export-driven surplus production**, which contributes to **India's trade surplus with the US**.

#### Q6. What could be the outcome of the ongoing Section 301 investigation?

- The **Section 301 probe will go through public comments & hearings** before a final decision is taken. The **final decision is expected in May 2026**.
- If the investigation concludes that **India has engaged in unfair trade practices**, the United States may **impose tariffs or other trade measures on India under the Trade Act of 1974**.

- In addition, the **US Court of International Trade (CIT)** has ordered that **the money collected via tariffs imposed under IEEPA must be refunded**, since those tariffs were not legally authorized.

### 3. Shadow Fleet Crackdown

#### Q1. What is the Shadow/dark fleet?

- The shadow fleet is a large group of oil tankers (3,000+ ships) that deliberately hide their identity to transport oil from countries under US/EU sanctions (Iran, Russia, Venezuela).
- The West has banned these countries from selling, but these sanctioned countries still earn “black money” to fund their governments, and militaries.

#### Q2. What tricks do shadow fleet ships use to hide?

- Turn off AIS (Automatic Identification System)**, so their real location disappears from public maps.
- Spoof GPS / fake location:** They send fake GPS signals to show they are somewhere else (show in the Pacific but they are actually near Iran).
- Flag changes:** They keep changing their country of registration (flag) to places with weak rules, making it hard to know who really owns them.
- Ship-to-ship transfers (STS):** They transfer oil from one tanker to another at middle sea (not at ports), so the oil's origin is hidden.
- Complex ownership:** The real owners hide behind layers of shell companies in tax havens, making it hard to trace who actually owns the ship.

#### Q3. Why is the US cracking down on shadow fleets?

- The US wants to stop Iran, Russia, and Venezuela from earning oil money that funds Iran's military and missile/drone programs, Russia's war in Ukraine, & Venezuela's authoritarian regime.
- The US wants to protect its own sanctions policy because if shadow fleets keep working, its sanctions become useless.
- The US wants to reduce global oil price manipulation and illegal trade that distorts markets.

#### Q4. How is the US stopping them?

The US is using multiple tools:

- Sanctions:** The US Treasury (OFAC) puts these tankers and their owners on a “blacklist.” Once sanctioned, no bank, insurer, or port in the world

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can legally deal with them. In early 2026, the US sanctioned many Iranian tankers and shipping firms.

- 2. Seizing tankers:** The US Navy or Coast Guard physically seizes (captures) these tankers when they are in international waters or friendly ports. In early 2026, the US seized 4 shadow fleet tankers (Marinera, Sophia, Centuries, Skipper) carrying Iranian and Venezuelan oil.
- 3. Tracking:** The US uses satellite data, AIS monitoring, and intelligence to spot suspicious ships. The US shares this data with allies (EU, UK, Japan) to coordinate seizures.
- 4. Targeting the whole network:** The US doesn't just target ships; it also sanctions Shipping companies, Insurers and banks, Middlemen and traders dealing with them. It also pressures countries not to let these tankers enter their ports or buy the oil.

### Q5. Who are the main targets of the US?

- 1. Iran's shadow fleet** that carries Iranian crude oil to China and other Asian buyers, earning dollars to fund the IRGC and weapons programs.
- 2. Russia's shadow fleet:** After the Ukraine war, Russia built a huge fleet of old tankers to export oil to India, China, and Africa at discounted prices. The US is now pushing new laws to expand sanctions on this "illicit shadow fleet" to cut off Putin's war funding.
- 3. Venezuela's shadow fleet:** Tankers that move Venezuelan oil to China.

### Q6. Why is stopping the Shadow fleet important as per the US?

1. Otherwise Oil money will be used in funding wars, missiles, and destabilizing regions.
2. Shadow fleets undermine international rules, create unsafe shipping (old ships), and increase oil spills and accidents.
3. Countries like India and China buy discounted oil from these shadow fleets. The US warns that dealing with these ships can bring secondary sanctions on their banks/companies also.

### Q7. Why can't shadow fleets be completely stopped?

1. New ships, new routes and new middlemen appear.
2. Russia, China, Iran strongly oppose the US crackdown, calling it "illegal".
3. Some countries (India) quietly continue buying this cheap oil while avoiding direct confrontation.

4. Risk of escalation as seizing tankers in international waters can lead to naval standoffs or diplomatic crises.

## 4. OPEC, OAPEC and IEA

### Q1. How can an Iran-US conflict affect global oil supply and prices?

1. In the event of a conflict between **Iran** and the **United States**, Iran has indicated that it may **close the Strait of Hormuz** which can lead to **reduced global oil supply** and **increased prices** as oil tankers would not be able to pass via the strait.
2. Such disruptions highlight the **importance of international organizations** that **manage oil supply, demand, and energy security**.

### Q2. What is the Organization of the Petroleum Exporting Countries (OPEC)?

1. It is a **12 member organization** of oil producing countries, established in **1960** with the **main objective of protecting the interests** of oil producing countries by **controlling the oil supply**.
2. **Why was OPEC created:** Before 1960, **Western oil companies artificially reduced oil prices**, which caused losses to oil-producing countries such as Kuwait, Saudi Arabia, Iran, UAE, Iraq, Venezuela, etc. To protect their interests, these countries formed OPEC.
3. **How does OPEC control oil supply:** OPEC decides the **total oil production quota**. This total production is **divided among member countries** based on production capacity and oil reserves. These decisions are taken **through consensus**, meaning **all members must agree**.
4. **Special role of Saudi Arabia:** It acts as a "**swing producer**." It has the ability to **increase or decrease production to stabilize global oil markets**.

### Q3. What is the Organization of Arab Petroleum Exporting Countries (OAPEC)?

1. It is a **11 member organization** of oil producing countries, established in **1968** with the aim to **protect the interests** of Arab oil-producing countries by **controlling oil supply**. **Iran is not a member** of OAPEC.
2. OAPEC countries have historically used **oil embargoes** as a political tool.
  - a. It means **boycotting oil exports** to certain countries which **reduces oil supply** and **distorts the global oil prices**.



#### Q4. Why was the International Energy Agency (IEA) created?

1. The creation of IEA was linked to the **Yom Kippur War (1973)** between Israel and Arab countries.
2. During the war OAPEC imposed an **oil embargo on countries supporting Israel**, including the US.
3. This created a **global oil shortage**. Oil prices **increased almost 4 times**, leading to **1973 oil crisis**.
4. In response, **17 OECD countries formed the IEA in 1974** to coordinate energy security.
5. Unlike OPEC & OAPEC, which protect producers, IEA aims to **protect oil-consuming countries**.

#### Q5. What are the membership rules and structure of the IEA?

1. The IEA currently has **33 full member countries** and **13 associate member countries**
2. **Conditions for full membership:** To become a full member of the IEA, a country must:
  - a. Be **member of the Organisation for Economic Co-operation and Development (OECD)**.
  - b. **Maintain oil reserves equal to at least 90 days of the previous year's net oil imports**.
3. **Associate membership:** In **2015**, IEA introduced **associate membership for non-OECD countries**.
  - a. Associate members can **attend meetings and discussions**.
  - b. However, they **do not have voting rights or decision-making power**.
  - c. **India became an associate member in 2017**.

#### Q6. What is the utility of the IEA during energy crises?

1. The IEA does **not produce oil** and does **not have its own oil reserves**.
2. However, it plays an important role during crises.
3. Member countries **maintain emergency oil stockpiles**. During disruptions, the IEA can **coordinate the release of these reserves into the market**.
4. This helps **stabilize oil supply** and **reduce price spikes**.
5. However, this is **not a permanent solution**. It only provides a **temporary response to manage supply disruptions during crises or wars**.

#### Q7. Why does India want full membership of the IEA?

1. It would give **voting rights** to India in the organization.
2. India would gain **decision-making power in global energy policies**.
3. India could receive **priority access to oil during global energy emergencies**, improving **energy security**.
4. It would increase **India's global influence and international image** in energy governance.

#### Q8. Why has India not yet become a full member of the IEA?

1. India has not yet become a full member because it does not meet two key requirements:
  - a. India is **not a member of the OECD**.
  - b. India does not yet maintain the required **90-day oil reserve**.
2. **India's current oil storage capacity:** India's **Strategic Petroleum Reserve (SPR)** includes:
  - a. **Underground caverns** with capacity for about **9 days of oil**.
  - b. **Refinery reserves** with capacity for about **65 days of oil**.
3. Therefore, India currently has about **74 days of oil storage capacity**.

#### Q9. What could be the future pathway for India to become a full IEA member?

1. India may increase its oil storage capacity by:
  - a. Expanding **strategic petroleum reserve caverns**, and
  - b. Increasing **refinery storage capacity**.
2. If India increases its oil reserves to **at least 90 days of imports**, it will be able to satisfy one of the key conditions for **full membership of the International Energy Agency**.
3. This would strengthen **India's energy security and global role in energy governance**.

## 5. Pandemic Agreement

### Context

1. After the **Covid-19 Pandemic**, **major weaknesses** were exposed in **global health governance** like poor preparedness, unequal access to vaccines and weak coordination between countries.
2. So, the countries decided to negotiate a **global framework** to manage future pandemics more effectively and the **Pandemic Agreement** was



proposed.

- 3. Pandemic Agreement:** It is a proposed **legally binding international treaty** designed to strengthen **global cooperation for pandemic prevention, preparedness and response**.
- 4. Aim:** To strengthen pandemic prevention & preparedness, ensure equitable access to health tools (like vaccines), promote international cooperation & address global health inequalities.
- 5.** The proposal for agreement was adopted in 2025 during the 78th World Health Assembly, but its detailed operational rules remain under negotiation & are expected to be **finalized by May 2026**.
- 6.** Recently, an **important meeting** is **scheduled** in **Geneva** regarding the agreement.

### Q1. How will the agreement come into force?

The implementation process involves four stages:

- 1. Negotiation** – An intergovernmental working group finalizes details such as the PABS system.
- 2. Adoption** – The final agreement is adopted by the **World Health Assembly**.
- 3. Ratification** – Countries must approve the agreement through their domestic legal processes.
- 4. Entry into Force** – The treaty becomes operational **after at least 60 countries ratify it, and 30 days after the 60th ratification**.

### Q2. What is the Pathogen Access and Benefit Sharing (PABS) system?

- 1.** A central component of agreement is the **Pathogen Access and Benefit Sharing (PABS) system**.
- 2.** During disease outbreaks, countries will **share pathogen samples and genetic sequencing data** to support **rapid research, vaccine development and medical innovation**.
- 3.** In return, **benefits derived from these resources must be shared globally**, especially with **developing countries**.

### Q3. What is the role of the Group of Equity?

- 1.** During the COVID-19 pandemic, **vaccines and medical supplies were concentrated in developed countries**, leaving many developing nations with limited access.
- 2.** The **Group of Equity**, which includes **India & several developing countries**, has been formed to demand **fair benefit-sharing structures** in return for sharing pathogen samples & genetic data.

### Q4. What are the 3 key demands of the Group of Equity?

- 1. Vaccine and Product Sharing:** If pharmaceutical companies develop vaccines or treatments using shared pathogen data, **10% of production should be donated to WHO**. This stockpile would be used to support **developing countries during health emergencies**.
- 2. Affordable Access:** During global health emergencies, **vaccines and medicines should be available to developing countries at affordable prices**.
- 3. Non-Exclusive Licensing:** Pharmaceutical companies should provide **non-exclusive licenses to manufacturers in developing countries** during emergencies. This would allow **local production of vaccines and medicines**, improving accessibility.

### Q5. What is the position of developed countries?

- 1.** Some developed countries, including the **European Union**, have accepted the idea of **10% vaccine donations**.
- 2.** However, they argue that such commitments should **remain voluntary**, and they should **not be legally binding on pharmaceutical companies**.
- 3.** Developing countries, including **India**, insist that **these obligations must be legally enforceable**.

### Q6. What is the World Health Assembly (WHA)?

- 1.** The **World Health Assembly** is the **highest decision-making body of the WHO**.
- 2. Key features:** It includes **delegates from all WHO member states**. The assembly **meets annually in Geneva**.
- 3. Major functions:** Formulates **WHO policies**, approves the **WHO budget**, reviews global health programmes, **appoints the WHO Director-General** and adopts **international agreements under Article 19 of the WHO Constitution**.

### Conclusion

The proposed **Pandemic Agreement** seeks to create a **fair and coordinated global framework for managing future pandemics**, ensuring **equitable access to health resources and stronger international cooperation during health emergencies**.

## 6. Raisina Dialogue 2026

- 1.** The Raisina Dialogue is **India's flagship international conference** on geopolitics and geo-economics.



2. It provides a platform where leaders and experts can exchange ideas on **global governance and security** and facilitate discussions on **global strategic issues**.
3. It is designed as a **multi-stakeholder and cross-sectoral platform**. Participants include heads of state, cabinet ministers, government officials, diplomats and strategic experts and leaders from the **private sector, media, and academia**.
4. It is **held annually** in **New Delhi** since **2016**, inspired by major global security conferences like **Munich Security Conference** and **Singapore's Shangri-La Dialogue**.
5. It is **organised** by the **Observer Research Foundation** in partnership with the **Ministry of External Affairs**.
6. **Raisina Dialogue 2026**, inaugurated by the Prime Minister, **marks the 11th session** of the conference with the theme "**Saṁskāra – Assertion, Accommodation, Advancement**".
7. It will include around **2700 participants from 110 countries**. The event runs over **three days**, during which global leaders engage in discussions and policy debates.
8. **Six Thematic Pillars of Raisina Dialogue 2026**
  - a. **Contested Frontiers: Power, Polarity, and Periphery** - Focus on changing global power structures and geopolitical tensions.
  - b. **Repairing the Commons: New Groups, New Guardians, New Avenues** - Addresses collective management of global commons such as oceans, cyberspace, and outer space.
  - c. **White Whale: The Pursuit of Agenda 2030** - Discusses progress toward the **United Nations Sustainable Development Goals**.
  - d. **The Eleventh Hour: Climate, Conflict, and the Cost of Delay** - Examines the relationship between climate change, conflict, and global security.
  - e. **Tomorrowland: Towards a Tech-topia**- Focuses on emerging technologies, digital governance, and innovation.
  - f. **Trade in the Time of Tariffs: Recovery, Resilience, Reinvention**- Explores global trade challenges, protectionism, and economic recovery.

on global challenges like geopolitical conflicts, economic stability, and climate change.

### Q1. What is the G7 and what is its nature?

1. The **G7 (Group of Seven)** is an **informal grouping of the world's most advanced economies**.
2. It serves as a **platform for policy coordination** on major global issues.
3. It is **not a formal organisation** - there is no treaty, legal status, or binding authority.
4. Its decisions are **non-binding** and based on consensus among members.

### Q2. How did the G7 evolve over time?

1. In **1975**, six countries formed the **G6** in response to the **1973 Oil Crisis** and economic instability.
2. In **1976**, Canada joined, forming the **G7**. In **1997**, Russia was included, creating the **G8**.
3. In **2014**, Russia was removed after the **annexation of Crimea**, reverting the group back to **G7**.

### Q3. Who are the members of the G7?

1. The G7 consists of seven developed countries:
  - a. **United States, Canada** (North America)
  - b. **United Kingdom, France, Germany, Italy** (Europe)
  - c. **Japan** (only Asian member)
2. The **European Union** also participates but is **not counted as a formal member**.

### Q4. What are the key features of the G7's structure and functioning?

1. It has **no permanent headquarters or secretariat**.
2. It operates through a **rotating presidency**, where each member hosts the summit.
3. It is **flexible and informal**, allowing quick coordination among members.
4. Decisions are based on **mutual agreement rather than legal enforcement**.

### Q5. What are the main areas of discussion in the G7?

1. Global economic governance and financial stability
2. Climate change and environmental protection
3. Geopolitical conflicts and international security
4. Development cooperation and global health issues
5. Emerging global challenges affecting advanced economies

## 7. G7 (Group of Seven)

### Context

The **G7 Foreign Ministers' meeting in Paris** is focusing



## Q6. What is India's position in relation to the G7?

1. India is **not a member** as it is classified as a **developing country**.
2. However, India is frequently invited as an **outreach partner or guest country**.
3. This reflects India's **growing importance in global governance & international decision-making**.

## Q7. How does the G7 differ from the G20?

1. The **G7 includes only developed economies**, while the **G20 includes both developed and developing countries**. Countries like **India and China are part of G20 but not G7**.
2. The **G20 is more representative** (broader and inclusive) of the global economy, whereas **G7** (smaller and more cohesive) **represents advanced economies**.

## Conclusion

The G7 remains an influential forum for advanced economies, but its long-term relevance depends on **greater inclusivity and adaptation to changing global power dynamics**.

## 8. MC14 and the WTO: Crisis of Multilateralism in Global Trade

### Context

The **14th Ministerial Conference (MC14) of the WTO** is being held in a context of rising **unilateralism and weakening multilateral trade rules**, raising concerns for global trade equity and governance.

### Q1. What is the World Trade Organization (WTO) and the significance of its Ministerial Conference (MC14)?

1. The **WTO** is a global body established in **1995** to regulate international trade and ensure a **rules-based multilateral trading system**.
2. **Ministerial Conference (MC)** is its **highest decision-making body**, held roughly every 2 years.
3. It has the authority to **negotiate trade rules, resolve disputes, and shape the future of global trade governance**.
4. MC14 is particularly important as it comes at a time when **multilateralism is weakening and trade tensions are rising globally**.

### Q2. Why is global trade multilateralism currently in crisis?

1. Rising **geopolitical tensions**, especially between major powers, have weakened cooperation.

2. There is a shift from **multilateralism to unilateralism**, where countries act independently rather than through global rules.
3. The **United States has imposed tariffs beyond agreed limits**, undermining WTO principles.
4. Increasing use of **bilateral trade agreements** is bypassing the WTO framework.
5. The WTO's **consensus-based decision-making system** has slowed rule-making, reducing its effectiveness.

### Q3. How has the United States contributed to the weakening of the WTO system?

1. The US has imposed **discriminatory tariffs**, violating the **Most Favoured Nation (MFN) principle**.
2. It has exceeded **bound tariff limits**, undermining agreed trade commitments.
3. It has pursued **coercive bilateral trade deals**, bypassing multilateral negotiations.
4. It has **blocked appointments to the WTO Appellate Body**, paralysing dispute settlement system.
5. This has weakened the WTO's ability to **enforce rules and resolve disputes effectively**.

### Q4. What are the key issues being debated at WTO MC14?

1. **Plurilateral Agreements:** Debate over allowing agreements among limited members within the WTO framework.
2. **E-Commerce Moratorium:** Whether to continue the ban on tariffs on digital trade.
3. **Special and Differential Treatment (SDT):** Whether developing countries should retain special protections.
4. **Restoration of Appellate Body:** Need to revive the dispute settlement mechanism.
5. **Protection of Core Principles:** Safeguarding principles like MFN and rule-based trade.

### Q5. Why are plurilateral agreements a matter of debate in the WTO?

1. Plurilateral agreements involve **only a subset of WTO members**, unlike universal agreements.
2. Supporters argue they can **revive rule-making** and overcome decision-making deadlock.
3. Critics fear they may **fragment the multilateral system** and weaken inclusiveness.
4. Countries like India are concerned that such agreements may **undermine consensus-based governance**.



### Q6. What is the significance of issues like the E-commerce moratorium and Special & Differential Treatment (SDT)?

1. The **E-commerce moratorium** prevents tariffs on digital trade; its continuation may lead to **revenue loss for developing countries**.
2. **SDT provisions** provide flexibility & benefits to developing countries based on their economic status. Attempts to dilute SDT may **reduce policy space for developing nations**.
3. These issues reflect the broader conflict between **developed and developing country interests in global trade**.

### Q7. What should be India's strategy at WTO MC14?

1. India should actively **defend multilateralism and rule-based trade systems**.
2. It should **build alliances with developing countries** to protect shared interests.
3. It should take balanced stance by **revisiting rigid positions**, including on plurilateral agreements.
4. It should advocate for **restoration of the Appellate Body** to strengthen dispute resolution.
5. It should aim to **emerge as a leader of the Global South in trade negotiations**.

### Q8. What are the challenges and what measures can strengthen the WTO system?

Challenges	Way Forward
<b>1. Rise of unilateral trade actions by major powers</b>	Reinforce commitment to multilateral trade rules
<b>2. Paralysis of dispute settlement system</b>	Restore Appellate Body through institutional reforms
<b>3. Slow decision-making due to consensus rule</b>	Explore flexible mechanisms while preserving inclusiveness
<b>4. Fragmentation through bilateral and plurilateral agreements</b>	Ensure transparency and alignment with WTO principles
<b>5. Conflict between developed and developing countries</b>	Strengthen SDT provisions and ensure equitable negotiations

### Conclusion

MC14 is a crucial test for the future of global trade, where preserving **multilateralism, fairness, and inclusivity** will determine whether the WTO remains relevant in a rapidly changing world.

## 9. GlobE Network: Global Cooperation Against Corruption

### Context

India recently hosted the **12th Steering Committee Meeting** of the **GlobE Network** in New Delhi, highlighting its growing role in **global anti-corruption cooperation**.

### Q1. What is the GlobE Network and under which framework does it operate?

1. It is a **global platform of anti-corruption law enforcement agencies**.
2. It was launched under the **Riyadh Initiative** during Saudi Arabia's G20 Presidency.
3. It operates under the **United Nations Convention Against Corruption (UNCAC)**.

### Q2. What is the composition and governance structure of the GlobE Network?

1. **Members:** 135 countries and 250 law enforcement authorities.
2. **Observers:** 18 organisations including: **Europol, World Bank** and International anti-corruption bodies.
3. **Governance:** Led by a **Steering Committee** (1 Chair, 1 Vice-Chair and 13 members) which provides overall direction and leadership.

### Q3. What is India's role in the GlobE Network?

1. India plays an active role in **global anti-corruption enforcement cooperation**.
2. **Nodal Ministry:** Ministry of Home Affairs (MHA)
3. **Member agencies:** Central Bureau of Investigation (CBI) and Enforcement Directorate (ED).

### Q4. What are the key functions of the GlobE Network?

1. Enables **direct cooperation between enforcement agencies** (not just through formal channels)
2. Helps in **investigation** of corruption cases, **prosecution** of offenders & **recovery** of illegal assets.
3. Provides faster and more **flexible coordination** and **agency-to-agency communication**.
4. Supported by **United Nations Office on Drugs and Crime (UNODC)**, which acts as its secretariat

### Conclusion

The GlobE Network strengthens **global coordination against corruption** by enabling **direct and efficient cooperation among enforcement agencies**, making it a key tool in tackling cross-border financial crimes.





# SECURITY

## 1. Gravity Bombs

### Context

Recently, the **United States** indicated that it may deploy **precision gravity bombs** during potential military operations involving **Iran**.

### What are Gravity Bombs?

Gravity bombs (also called “**free-fall bombs**”) are a **type of aerial munition that falls toward the target primarily due to gravity after being released from an aircraft**. Unlike missiles or rockets, these weapons **do not possess their own propulsion system**.

### Working Mechanism

1. The bomb is **released from an aircraft such as a fighter jet or bomber**. After release, the bomb **falls toward the target due to gravitational force**.
2. The path of the bomb depends on three main factors - **gravity, aerodynamic forces and speed and altitude of the aircraft at the moment of release**.

### Difference from Cruise Missiles

Feature	Gravity Bomb	Cruise Missile
<b>1. Propulsion</b>	No internal engine	Powered by an engine
<b>2. Movement</b>	Falls due to gravity	Self-propelled and guided
<b>3. Launch Method</b>	Dropped from aircraft	Can be launched from land, sea, or air

### Types of Gravity Bombs

Gravity bombs can carry different types of warheads.

1. **Conventional Gravity Bombs:** Contain **standard high explosives** used to destroy infrastructure, military installations, or troop formations.
2. **Nuclear Gravity Bombs:** Contain **nuclear warheads** and are designed to deliver nuclear payloads from aircraft. Such bombs have historically been part of **strategic nuclear deterrence systems**.

### Evolution into Precision Weapons

1. Traditional gravity bombs were often **less accurate**

because they relied purely on free fall.

2. Modern versions have been improved with **guidance kits** that use technologies such as GPS guidance and laser targeting.
3. These upgraded weapons are often called **precision-guided gravity bombs**, allowing **more accurate strikes and reduced collateral damage**.

### Conclusion

Thus, gravity bombs represent **one of the oldest yet continuously evolving forms of aerial weaponry used in modern warfare**.

## 2. INS Trikand

### Context

The **INS Trikand** will participate in the **58th National Day celebrations of Mauritius**, reflecting India’s naval outreach and defence cooperation with partner countries.

### Q1. What is INS Trikand?

1. It is a **Talwar-class guided-missile frigate of the Indian Navy** which was constructed at the **Yantar Shipyard** and is the 3rd and final ship of the 2nd batch of Talwar-class frigates.
2. It was **commissioned** into the **Indian Navy** in **June 2013 at Kaliningrad, Russia**.
3. It is part of **Western Fleet** and functions under the **Western Naval Command**, based in **Mumbai**.

### Q2. What are the main features and capabilities of INS Trikand?

1. **Weapon Systems**
  - a. Equipped with the **BrahMos** supersonic missile system.
  - b. Carries **Shtil surface-to-air missiles** for air defence.
  - c. Fitted with an **A-190 medium-range naval gun** and a **30 mm electro-optical close-in weapon system** for short-range defence.
  - d. Includes **anti-submarine warfare systems** such as torpedoes and rocket launchers.
  - e. Integrated **advanced electronic warfare systems**.



- 2. Combat and Sensor Integration:** All weapons and sensors are connected through the **Trebovanie-M Combat Management System**, which enables the ship to **detect and engage multiple surface, sub-surface, and aerial threats simultaneously**.
- 3. Propulsion and Speed:** Powered by **four gas turbines**, allowing the ship to achieve **speeds exceeding 30 knots**.
- 4. Aviation Capability:** The frigate can operate a **Kamov Ka-31** helicopter for surveillance and reconnaissance missions.

## Conclusion

INS **Trikand** is a modern guided-missile frigate of the Indian Navy with advanced missile, anti-submarine, and surveillance capabilities, contributing significantly to **India's maritime security and naval diplomacy in the Indian Ocean region**.

## 3. P8I Aircraft

### Context

The Ministry of Defence has approved **maintenance contracts for P-8I aircraft**, highlighting their importance in India's **maritime security and surveillance**.

#### Q1. What is the P-8I Aircraft?

- The **P-8I Poseidon** is a **long-range, multi-mission maritime patrol aircraft**.
- It is manufactured by **Boeing** for the **Indian Navy**.
- It is a variant of the **P-8A Poseidon** used by the **US Navy**, customised for India.
- It replaced the older **Tupolev Tu-142** aircraft in the Indian Navy fleet.

#### Q2. What are the key features of the P-8I Aircraft?

- It is equipped with **advanced sensors and surveillance systems**.
- It has **state-of-the-art radar and sonar capabilities** for detecting submarines.
- It carries **weapons systems** for offensive and defensive operations.
- It can monitor **surface ships, submarines, and maritime activities**.
- It is capable of operating in **all-weather conditions over long distances**.

#### Q3. What are the operational capabilities of the

### P-8I Aircraft?

- 1. Anti-Submarine Warfare (ASW):** Detects and tracks submarines.
- 2. Anti-Surface Warfare (ASuW):** Targets enemy ships.
- 3. Maritime surveillance and reconnaissance:** Monitors sea lanes and activities.
- 4. Intelligence gathering:** Supports strategic and tactical operations.
- 5. Search and rescue operations** during emergencies.

#### Q4. What are the technical specifications of the P-8I Aircraft?

- 1. Maximum take-off weight:** ~85,139 kg
- 2. Maximum speed:** ~789 km/h
- 3. Maximum altitude:** ~12,496 m
- 4. Range:** Over 2,200 km with about **4 hours endurance on station**.

#### Q5. What is the significance of the P-8I Aircraft for India?

- It strengthens India's **maritime security in the Indian Ocean Region (IOR)**.
- It enhances **surveillance over strategic sea routes and chokepoints**.
- It improves **anti-submarine capabilities**, especially against advanced threats.
- It supports **network-centric warfare and real-time intelligence sharing**.
- It plays a key role in **disaster response and search-and-rescue missions**.

### Conclusion

The P-8I aircraft is a critical asset for India's **maritime dominance and security**, and continued upgrades and integration will enhance its strategic effectiveness.

## 4. Assam Rifles: India's Oldest Paramilitary Force

### Context

The Union Home Minister recently greeted personnel of the **Assam Rifles** on their Raising Day, highlighting their role in **internal security and border management**.

#### Q1. What is Assam Rifles and under which ministry does it function?



1. Assam Rifles is one of the **six Central Armed Police Forces (CAPFs)**.
2. It functions under the **Ministry of Home Affairs (MHA)**.
3. Headquarters of Director-General is located in **Shillong**.

## Q2. What are the key functions and roles of Assam Rifles?

1. It conducts **counter-insurgency operations**, especially in Northeast India.
2. It operates in other areas as required for **internal security**.
3. It plays a key role in:
  - a. Maintaining law and order
  - b. Supporting the Indian Army in border areas

## Q3. How did Assam Rifles evolve historically?

1. Originated in **1835** as the **Cachar Levy**, formed to protect British settlements and tea estates.
2. Later became the **Frontier Force**, conducting operations along Assam's borders.
3. In **1870**, reorganised into **Assam Military Police Battalions**.
4. Contributed troops to the British Army in **Europe and West Asia**.
5. Renamed as **Assam Rifles in 1917**.

## Q4. What roles have Assam Rifles played after Independence?

1. Participated in the **1962 India–China War**.
2. Contributed to the **Indian Peace Keeping Force (IPKF) in Sri Lanka (1987)**.
3. Continues to play a major role in:
  - a. Maintaining peace in Northeast India
  - b. Counter-insurgency operations

## Conclusion

Assam Rifles has evolved from a colonial militia into a **key pillar of India's internal security**, especially in the Northeast, combining **military capability with peacekeeping responsibilities**.

## 5. Shtil Missile System

### Context

The **Ministry of Defence** recently signed defence contracts worth **₹5,083 crore**, including the procurement of **Shtil**

**vertical-launch surface-to-air missiles for the Indian Navy and Advanced Light Helicopters for the Indian Coast Guard**. The Shtil system strengthens India's naval capability to counter aerial threats at sea.

## Q1. What is the Shtil Surface-to-Air Missile (SAM) system and what are its main technological features?

1. **Shtil** is a medium-range **ship-based surface-to-air missile system** designed for naval air defence.
2. The system was **developed by Russia** for deployment on modern naval warships.
3. It uses the **9M317ME missile equipped with semi-active radar homing guidance**.
4. The missile system follows a **vertical launch configuration**, allowing rapid response to aerial threats.
5. It is integrated with **shipborne radar and combat management systems**.
6. The system is designed to protect naval vessels from **multiple aerial attacks simultaneously**.
7. Its automation enables **quick reaction during high-speed combat scenarios**.

## Q2. How does the Shtil missile system operate as part of a naval air-defence network on warships?

1. Enemy aerial threats are first detected by the **ship's long-range surveillance radar**.
2. The information is processed through the **ship's combat management system** to identify threats.
3. The missile is launched vertically from **dedicated launch cells inside the warship**.
4. During flight, the missile is guided toward the target using **radar illumination signals**.
5. The system can simultaneously track and engage **multiple airborne targets**.
6. Automated targeting systems help **prioritise the most dangerous threats first**.
7. This layered defence helps safeguard **entire naval fleets rather than a single vessel**.

## Q3. What are the key technical specifications and operational capabilities of the Shtil missile system?

1. The system has an engagement range of **about 3.5 km to 50 km**.
2. It can intercept targets at altitudes ranging from **5 metres to nearly 15 km**.



3. The missile travels at speeds close to **Mach 2.5 (around 2.5 times the speed of sound)**.
4. It can engage **up to 12 aerial targets simultaneously**.
5. The system uses **semi-active radar homing for precise interception**.
6. The missile is capable of **high manoeuvrability**, enabling interception of fast targets.
7. Vertical launch allows **rapid missile firing without rotating launchers**.
8. Integration with radar ensures **continuous tracking and targeting accuracy**.

#### Q4. Why is the procurement of Shtil missiles important for India's maritime security and naval preparedness?

1. The system strengthens the **air-defence capability of Indian naval warships**.
2. It improves protection against **anti-ship cruise missiles**, a major modern naval threat.
3. Stronger air defence enhances **survivability of aircraft carriers and destroyers**.
4. It contributes to securing **strategic sea lanes in the Indian Ocean Region**.
5. Advanced missile systems support **India's naval modernisation programme**.
6. The system helps counter **emerging threats such as drones and precision weapons**.
7. It enhances India's ability to **maintain maritime dominance and deterrence**.

#### Q5. How does the vertical launch design of the Shtil missile system improve naval combat effectiveness?

1. Vertical launch enables missiles to **fire instantly in any direction**.
2. It eliminates the need to **physically rotate missile launchers toward targets**.
3. This reduces **reaction time during sudden aerial attacks**.
4. Launch cells allow **multiple missiles to be stored within compact ship compartments**.
5. Missiles can quickly **reorient toward targets after vertical launch**.
6. This system allows warships to **engage threats approaching from different directions simultaneously**.
7. It improves overall **fleet defence during saturation**

**missile attacks.**

#### Q6. What kinds of modern aerial threats can the Shtil missile system intercept in maritime warfare?

1. The system can destroy **supersonic fighter aircraft attempting naval strikes**.
2. It can intercept **anti-ship cruise missiles approaching warships**.
3. It is capable of engaging **attack helicopters used in naval combat operations**.
4. It can neutralise **unmanned aerial vehicles (UAVs) and reconnaissance drones**.
5. The system is effective against **low-flying sea-skimming missiles**.
6. It can counter **high-speed manoeuvring aerial targets**.
7. These capabilities help address **multi-dimensional threats in modern naval warfare**.

#### Q7. How do radar integration, automation and guidance technologies enhance the operational efficiency of the Shtil missile system?

1. The system uses **advanced 3-dimensional radar for early detection of threats**.
2. Radar tracking provides **accurate target identification and trajectory prediction**.
3. Automated command systems allow **rapid missile launch decisions**.
4. Semi-active radar homing ensures **precision guidance during interception**.
5. Integrated sensors support **continuous tracking of moving targets**.
6. Automation reduces **human reaction delays during high-speed combat situations**.
7. Combined technologies significantly improve **reaction time and interception success rate**.

#### Conclusion

The **Shtil missile system** plays a crucial role in strengthening India's naval air-defence capability. By combining **vertical launch technology, advanced radar integration, and high-speed interception**, it enables warships to defend against a wide range of aerial threats. The system enhances the Indian Navy's readiness to safeguard maritime interests and maintain security in the **Indian Ocean Region**.





# ECONOMY

## 1. Why is the Rupee Depreciation happening so fast?

### Context

The Indian Rupee has depreciated significantly against US Dollar, reaching a historic low of ₹94 per \$1.

### Q1. What is the difference between depreciation, devaluation, appreciation and revaluation?

- Depreciation:** Fall in value of currency due to **market forces (demand–supply)**.
- Devaluation:** Fall in value of currency due to **government/central bank decisions**.
- Appreciation:** Rise in value of currency due to **market forces**.
- Revaluation:** Rise in value of currency due to **government decisions**.

### Q2. What are the basic concepts of Balance of Payments (BoP) and Demand-Supply?

**Balance of Payments:** BoP is divided into:

- Current Account**
  - Visible Items (Goods):**
    - Usually **Imports > Exports** → **Trade Deficit**
    - Trade happens in **dollars** → **Demand for dollar increases**
  - Invisible Items (Services):** Can be in **surplus (Exports > Imports)**
  - Overall, India usually has a **Current Account Deficit (CAD)**.
- Capital Account** Includes **foreign investments**:
  - FDI (Foreign Direct Investment):** Long-term investment. Can be **incoming or outgoing**
  - FPI (Foreign Portfolio Investment):** Short-term investment. Can be **incoming or outgoing**
  - India generally has a **capital account surplus**, but recently **FDI and FPI inflows have slowed down and FPI outflows have increased**.

### Demand–Supply Concept

- Demand > Supply** → Value increases
- Supply > Demand** → Value decreases

### Q3. Why is the Indian Rupee depreciating currently?

Reasons can be divided into **three categories**:

- Domestic (India-specific) Reasons:**
  - Trade Deficit:** Imports > Exports → More dollars going out
  - Higher Current Account Deficit (CAD):** More dollar outflow → higher demand for dollar
  - Foreign Investment Trends:** Outflows > Inflows due to
    - Policy uncertainty** (tax, labour laws) → lower investor confidence
    - High fiscal deficit** (high expenditure, low revenue) → more borrowing
    - High inflation** → reduces rupee purchasing power → less attractive to investors
- Global Factors**
  - Geopolitical Tensions (Iran–US conflict):** Increases global uncertainty and investors move towards **safe haven currencies like US Dollar**.
  - Rising Oil Prices:** Oil is priced in **dollars**. Importing countries like India need more dollars → **demand increases**
- United States Factors**
  - Strong US Dollar:** Global trade is largely conducted in **US Dollar (safe haven currency)**
  - US Federal Reserve Policy:** **Higher interest rates** in **US dollar-denominated assets** which gives better returns and attracts investors.
  - US Tariffs on Indian Goods:** Indian exports become **costlier**. **Exports decrease** → **dollar inflow reduces**. Lower supply of dollar → **rupee depreciates**.



## 2. Cash Transfer Schemes

### Context

- Recently, the Government of Punjab launched the **Maa Satkar Yojana** on International Women's Day which has a Budget allocation of ₹9,300 crore, covering 97% of women in Punjab and provides ₹1,000 per month for women and ₹1,500 per month for Scheduled Caste



women.

- The scheme has revived the debate on whether cash transfer schemes are beneficial welfare policies or fiscally unsustainable “freebies.”

### Q1. What are Cash Transfer Schemes?

- They are government welfare programs that provide **direct financial assistance to beneficiaries**, usually through bank accounts with the aim to reduce poverty, provide social security and support vulnerable groups.
- In India, these schemes are implemented via **Direct Benefit Transfer**, supported by the **JAM Trinity**, which links bank accounts (**Jan-Dhan**), identity (**Aadhar**), and **Mobile numbers** to ensure efficient delivery.

### Q2. What is Universal Basic Income (UBI)?

- Some **cash transfer schemes** resemble the concept of **Universal Basic Income** which ensures regular cash payment to every citizen with no conditions attached and universal coverage.
- The idea has been discussed by thinkers such as **Thomas More, Thomas Paine, and Martin Luther King Jr.** and even the **Economic Survey of India 2016–17** examined UBI as a possible **future welfare model** for India.

### Q3. Why are states introducing women-focused cash transfer schemes?

- Several Indian states have **introduced schemes** (like Ladli Behna Yojana, Lakshmi Bhandar Scheme, Lado Lakshmi Yojana) that provide **direct financial assistance to women**.
- Reasons for such schemes**
  - Women often have lower participation in the labour force.
  - They face wage discrimination and limited ownership of assets.
  - Cash transfers help provide independent income and social security.
  - These schemes aim to strengthen women’s financial autonomy and household decision-making power.

### Q4. What are the advantages of cash transfer schemes?

- Reducing Gender Inequality and Feminization of Poverty:** Cash support can reduce income gaps and improve women’s financial independence.
- Recognition of Unpaid Care Work:** As per **Time Use Survey**, women perform **84% of unpaid care**

**work** and spend around **305 minutes daily** (men - 88 minutes) on **unpaid work**. Cash transfers help recognise this invisible labour.

- Improving Household Welfare:** Evidence shows that women often use income for children’s education, healthcare and nutrition. This improves overall **social development indicators**.
- Efficient Welfare Delivery:** Direct cash transfers reduce corruption, leakages and intermediaries. This makes welfare delivery **more transparent and efficient**.

### Q5. What is the legal perspective on welfare promises?

- In **Subramaniam Balaji v State of Tamil Nadu**, the Supreme Court of India ruled that:
  - Welfare promises in election manifestos are not illegal.
  - However, governments must ensure financial transparency and sustainability.
- The **Election Commission of India** later required political parties to disclose the financial implications of such promises.

### Q6. What are the challenges and criticisms of cash transfer schemes and how can it be addressed?

Challenges	Way Forward
<b>1. Fiscal pressure:</b> Large-scale cash transfer schemes increase government expenditure and may widen the fiscal deficit, especially in states with high public debt.	<b>Ensure fiscal sustainability:</b> Governments should design schemes within responsible budget limits and ensure long-term financial sustainability.
<b>2. Limited long-term economic impact:</b> Cash transfers are revenue expenditure and do not create productive assets such as infrastructure, industries, or irrigation systems.	<b>Balance welfare with productive investment:</b> Governments should combine welfare transfers with investment in infrastructure, agriculture, and industrial development.
<b>3. Dependency concerns:</b> Regular financial support may discourage labour participation or reduce incentives to seek employment.	<b>Link transfers with skill development and employment:</b> Welfare programs can be connected with skill training, entrepreneurship, and livelihood opportunities.



<p><b>4. Opportunity cost:</b> Spending heavily on cash transfers may reduce public investment in sectors such as education, healthcare, infrastructure, and industrial growth.</p>	<p><b>Prioritize balanced public spending:</b> Governments should allocate resources carefully to ensure both social welfare and long-term development.</p>
<p><b>5. Risk of ineffective use of funds:</b> Lack of financial awareness may lead to unproductive use of the transferred money.</p>	<p><b>Promote financial literacy:</b> Governments and institutions should provide financial education and awareness programs for beneficiaries.</p>

**Conclusion**

Cash transfer schemes can be powerful tools for reducing poverty, promoting gender equality, and improving household welfare. However, their long-term success depends on careful design, fiscal sustainability, and integration with broader development policies. A balanced approach that combines social welfare with investments in skills, infrastructure, and economic growth can ensure that such schemes promote inclusive development rather than fiscal populism.

**3. Unemployment in India**

**Context**

India’s labour market faces concerns that **official data underestimates unemployment**, while strong GDP growth has not translated into proportionate job creation, raising fears of **jobless growth** - a situation where **economic growth does not generate enough employment opportunities**.

**Q1. What is Unemployment?**

According to the **International Labour Organization (ILO)**, unemployment refers to a situation in which a **person who is able and willing to work** at the **prevailing wage rate** is **unable** to find employment.

**Q2. What are the key labour market indicators used to measure employment?**

- 1. Labour Force:** It consists of **all employed persons** along with those **unemployed but actively seeking work**.
- 2. Unemployment Rate:** The unemployment rate measures the **share of unemployed persons in the labour force**.  $Unemployment\ Rate = (Unemployed / Total\ Labour\ Force) \times 100$
- 3. Labour Force Participation Rate (LFPR):** The

percentage of the **working-age population** (15 years and above) that is either **employed** or **actively seeking employment**. India’s LFPR (**January 2026**) is **55.9%**.

- 4. Worker Population Ratio (WPR):** WPR indicates the **proportion of the total population that is employed**.  $WPR = Employed\ Persons / Total\ Population$ .

**Q3. How is unemployment measured in India?**

- 1. Employment data in India** is compiled by the **National Statistical Office (NSO)** under the **Ministry of Statistics and Programme Implementation** through the **Periodic Labour Force Survey (PLFS)**.
- 2. Frequency of Data Collection:** Annual, Quarterly and Monthly (introduced in 2025) Estimates
- 3. Methods of Measurement:**
  - a. Usual Status (Long-term employment):** Uses a **365-day reference period** where the person is classified as **principal status** if worked for **183 days or more** in a year and **subsidiary status** if worked for **at least 30 days** in a year.
  - b. Current Weekly Status (Short-term employment):** Reference period is **last 7 days**. If a person worked **even one hour during the week**, they are considered employed.
  - c. Current Daily Status:** Measures employment **day-by-day based on hours worked**.



**Q4. What are the major types of unemployment in India?**

- 1. Disguised Unemployment:** More workers are employed than required, so the **additional worker contributes almost zero productivity**. This is common in agriculture.
- 2. Structural Unemployment:** Occurs when there is a **mismatch between workers’ skills and the requirements of industries**.
- 3. Cyclical Unemployment:** Happens during **economic slowdowns or recessions**, when businesses reduce hiring.
- 4. Frictional Unemployment:** Short-term unemployment that occurs when **people change jobs or search for new opportunities**.
- 5. Vulnerable Employment:** Workers are employed but **lack formal contracts, job security, or social protection**, common in the informal sector and gig economy.
- 6. Technological Unemployment:** Jobs are lost due to **automation, artificial intelligence, and technological changes**.



## Q5. What are the recent trends in unemployment in India?

According to PLFS 2026 data:

1. **Unemployment is higher in urban areas** (7%) than in rural areas (4.2%). Overall unemployment rate is 5%.
2. Even **female unemployment is higher in urban areas** (9.8%) than in rural areas (4.3%).
3. **Re-Agriculturalisation trend** can be seen as people move back to agriculture due to **high living cost** in cities, rising **urban inflation** and **limited employment opportunities** in urban areas.

## Q6. Why is unemployment high in India?

1. **Jobless Growth:** Economic growth is concentrated in **capital-intensive sectors such as IT, finance, and technology**, which generate high output but limited employment.
2. **Skill Mismatch:** The education system focuses more on **academic degrees than practical skills**, producing graduates who lack industry-relevant abilities.
3. **Slow Industrialisation:** Manufacturing contributes only **16–17% of GDP**, far below the national target of 25%.
4. **Low Female Labour Force Participation:** Factors include **social norms, safety concerns, and lack of workplace infrastructure**.
5. **Weak MSME Sector:** They face **credit shortages, regulatory barriers, and limited market access**.
6. **Large Informal Sector:** Nearly **90% of India's workforce is employed in informal jobs**, often without stable wages or social security.

## Q7. What are the implications of high unemployment?

1. **Economic Impacts:** High unemployment reduces consumption, lowers purchasing power, and slows overall economic growth.
2. **Social Impacts:** It fuels inequality, triggers social unrest or protests, and can lead to migration and brain drain.
3. **Psychological Impacts:** Unemployment often causes stress, social pressure, and declining self-confidence among individuals.
4. **Fiscal Impact:** High unemployment increases **government spending on welfare schemes and subsidies**, creating pressure on public finances.

## Q8. What steps has the government taken to

## address unemployment?

Several initiatives aim to promote employment generation and skill development:

1. **Viksit Bharat Guarantee Rozgar & Ajeevika Mission (VBG-RAMJI):** Employment guarantee programme replacing **Mahatma Gandhi National Rural Employment Guarantee Act with 125 days of employment guarantee**.
2. **PM Viksit Bharat Rozgar Yojana (2026):** Incentives for formal job creation.
3. **Pradhan Mantri Kaushal Vikas Yojana 4.0:** Skill training initiatives.
4. **Pradhan Mantri Mudra Yojana:** Collateral-free loans for small entrepreneurs.
5. **PM SVANidhi:** Financial support for street vendors.
6. **Startup India and Stand Up India.**
7. **Digital India and Smart Cities Mission.**

## Conclusion

India's challenge is not just achieving high economic growth but ensuring that growth **creates sufficient employment opportunities**. Addressing issues such as **skill mismatch, slow industrialisation, and informal employment** will be essential to achieve **inclusive and employment-intensive growth**.

## 4. AgriPV (Agrivoltaics)

### Context

The government plans to include AgriPV (Agrivoltaics) under PM KUSUM Scheme 2.0, aiming to enhance farmer income and expand clean energy use in agriculture.

### Q1. What is AgriPV (Agrivoltaics)?

1. **AgriPV (Agrivoltaics)** refers to the **simultaneous use of land for agriculture and solar power generation**.
2. Solar panels are installed **between crop rows, or elevated above crops**.
3. It **does not replace farming**, but adds an additional layer of income through energy generation.

### Q2. What is the PM KUSUM Scheme and its link with AgriPV?

1. The scheme was **launched in 2019** to promote **solar irrigation pumps, reduce diesel dependence and increase farmer income**.
2. It provides up to **60% subsidy**.
3. Under **KUSUM 2.0**, the scope is being expanded to include **AgriPV systems**, integrating farming with



solar energy.

### Q3. Why is AgriPV needed?

- 1. Land constraint:** Solar projects need large land, while India has **fragmented landholdings** → AgriPV resolves the **energy vs agriculture conflict**.
- 2. Decarbonisation:** Reduces dependence on **diesel pumps**, lowering emissions.
- 3. Income diversification:** Farmers can **use electricity for irrigation** and **sell surplus power**.

### Q4. Which crops are suitable for AgriPV?

1. Suitability **depends on** climate, soil conditions and sunlight intensity.
2. **Madhya Pradesh:** Tomato, onion, garlic, turmeric.
3. **Karnataka & Maharashtra (semi-arid):** Ragi, jowar, chilli, banana.

### Q5. How does AgriPV work?

1. Crops are cultivated in **rows**, with solar panels installed **between rows**, or on **raised structures above crops**.
2. Types include:
  - a. **Vertical panels**
  - b. **Tracking panels** (move with sunlight)
  - c. **Greenhouse-integrated systems**

### Q6. What are the benefits of AgriPV?

1. **Economic Benefits:** Additional and **stable income** from electricity and **reduced input cost** (diesel replaced by solar).
2. **Environmental Benefits:** **Lower greenhouse gas emissions** which also supports **clean energy transition**.
3. **Agricultural Benefits:** Provides **shade**, reducing heat stress and protecting crops from **excess rain, hail, and frost**. This improves **crop resilience**.
4. **Energy Security:** Increases **renewable energy capacity** and reduces dependence on **fossil fuels and imports**.

### Q7. What are the challenges and way forward?

Challenges	Way Forward
<b>High initial investment cost</b>	Provide targeted subsidies under KUSUM 2.0
<b>Lack of awareness among farmers</b>	Strengthen training, awareness campaigns, and extension services

<b>Crop compatibility issues</b>	Promote region-specific research and crop advisories
<b>Small and fragmented landholdings</b>	Encourage Farmer Producer Organisations (FPOs) and cooperative models
<b>Technical complexity in installation and maintenance</b>	Involve research institutions and agricultural universities
<b>Risk of excessive corporate control</b>	Regulate land leasing and ensure farmer safeguards
<b>Policy and regulatory gaps</b>	Develop clear guidelines and implementation frameworks

### Conclusion

AgriPV offers a **win-win solution** by combining **energy generation with agriculture**, helping India achieve **farmer income growth, energy security, and sustainable development simultaneously**.

## 5. Districts as Export Hubs (DEH) Initiative

### Context

The government recently updated Parliament on the progress of the **Districts as Export Hubs (DEH) Initiative**, which aims to make every district a contributor to **India's exports**.

### Q1. What is the Districts as Export Hubs (DEH) Initiative and what is its objective?

1. The DEH initiative was launched in **2019**.
2. It is implemented by the **Directorate General of Foreign Trade under Department of Commerce**.
3. **Main objective:**
  - a. Identify and promote **unique products from each district**.
  - b. Help sell them in both, **domestic markets and international markets**.

### Q2. How does the DEH initiative work (decentralised export promotion mechanism)?

1. Export promotion is shifted from **central level** → **district level**.
2. Districts become **active players in export growth**.
3. This ensures local industries get **direct support** and export growth becomes **regionally balanced**.



### Q3. What is the institutional structure of DEH?

1. **State level:** State Export Promotion Committee (SEPC)
2. **District level:** District Export Promotion Committee (DEPC)
3. **These bodies:**
  - a. Identify products
  - b. Solve local export problems
  - c. Coordinate with government and exporters
4. Covers **all districts (734 districts)** across India
5. **Focus sectors** include agriculture, toys, GI-tagged products and local manufacturing clusters.
6. **Aim:** Promote **district-specific strengths**

### Q4. What are District Export Action Plans (DEAPs) and why are they important?

1. They are **district-level plans for export promotion** as a roadmap helps each district **export better and faster**.
2. They identify **problems (bottlenecks)** in production and supply chain.
3. They then suggest **solutions** to improve exports of the products.

### Q5. How does DEH support local producers and exporters?

1. Helps small producers improve production scale and connect with **international buyers**
2. Promotes branding of local products and better market access.
3. Focus is on **local to global transformation**

### Conclusion

The DEH initiative is a major step towards **decentralised and inclusive export growth**, helping India transform **local products into global brands while ensuring balanced regional development**.

## 6. RoDTEP Scheme

### Context

The government has **restored rates and value caps** under the **RoDTEP Scheme**, providing relief to exporters and strengthening export competitiveness.

### Q1. What is the RoDTEP Scheme and what is its objective?

1. The RoDTEP Scheme was introduced under the **Foreign Trade Policy (2015–20)** and started from **January 1, 2021**, replacing the **Merchandise Export Incentive Scheme (MEIS)**.
2. **Main objective:**
  - a. Refund hidden taxes and duties that exporters cannot claim otherwise
  - b. Encourage exports and improve global competitiveness
3. The government **returns extra hidden costs** to exporters so their products become **cheaper and competitive globally**.

### Q2. What kind of taxes are refunded under RoDTEP?

1. Taxes that are:
  - a. Not refunded through other schemes
  - b. Already included in the cost of exported goods
2. Examples: Embedded taxes in electricity, fuel, transport, etc.
3. This ensures exporters are **not burdened by hidden costs**.

### Q3. How is the scheme implemented?

1. Implemented through a **fully digital system** ensuring transparency and faster processing.
2. Administered by the **Department of Revenue, Ministry of Finance**
3. Designed to be **compliant with WTO rules** (important for global trade fairness)

### Q4. Who is eligible under the RoDTEP Scheme?

1. **All export sectors** are covered, with priority given to **labour-intensive industries**.
2. **Eligible categories:** Manufacturer exporters, Merchant exporters (traders), SEZ units and Export Oriented Units (EOUs).
3. Also covers goods exported via **e-commerce and courier**.
4. **Condition:** Goods must be of **Indian origin**.
5. **Not Eligible:** **Re-exported goods** (imported and then exported again) are **not covered**.

### Conclusion

The RoDTEP Scheme plays a crucial role in making Indian exports **cost-competitive globally** by refunding hidden taxes, thereby supporting **export growth and economic expansion**.



## 7. Gender Wage Gap in India

### Context

The Periodic Labour Force Survey (PLFS) 2025 highlights that although women's wages are rising faster than men's, **significant gender-based wage inequality persists**. This reflects deeper structural issues in India's labour market related to **participation, job quality, and access to opportunities**.

### Q1. What is the Gender Wage Gap?

1. Gender Wage Gap refers to the difference in earnings between men and women for similar work across sectors and job types.
2. It reflects structural inequalities in employment access, skill development & labour market participation.
3. It is present across salaried jobs, casual labour and self-employment.

### Q2. What are the key findings of PLFS 2025?

#### 1. Employment Levels

- a. Total employed: **61.6 crore**
- b. Male workers: **41.6 crore**
- c. Female workers: **20.0 crore**
- d. **Indicates:** Significant gender gap in employment

#### 2. Wage Growth Trends

- a. Women's wages grew faster than men's.
  - i. **Salaried jobs:** Women: 7.2% | Men: 5.8%
  - ii. **Self-employment:** Women: 8.8% | Men: 8%
  - iii. **Casual labour:** Women: 5.4% | Men: -0.2%
- b. **Suggests:** Gradual improvement in wage dynamics

#### 3. Persistent Wage Gap

- a. Salaried jobs: Women earn **76%** of men's wages
- b. Casual labour: Women earn **69%** of men's wages
- c. Self-employment: Women earn **36%** of men's wages
- d. **Conclusion:** Growth  $\neq$  equality

### Q3. What is the nature of the wage gap in India?

1. The wage gap exists across all sectors and job types.
2. It varies by nature of employment.
3. **Key feature:** Women concentrated in low-paying jobs and informal sector.
4. **Structural issues:** Occupational segregation and Informalisation of work.

### Q4. What are the causes of gender wage inequality?

1. Low female labour force participation
2. **Job segregation** - Women in low-paying sectors
3. **Limited access** to education, skills and capital.
4. **Social norms** - Patriarchal roles and mobility restrictions.
5. **Unpaid care work** - Reduces working hours and opportunities.

### Q5. What are the broader labour market trends?

#### 1. Employment Structure Changes

- a. Increase in women in salaried jobs: 18.2% (2025) vs 16.6% (2024)
- b. Decline in self-employment: Shift toward better-quality jobs
- c. Slight rise in casual labour participation

#### 2. Unemployment Trends

- a. Rural unemployment: 2.4% (down)
- b. Urban unemployment: 4.8% (down)
- c. Youth unemployment: 9.9% (down)
- d. **Concern:** Female youth unemployment increased

#### 3. Labour Force Participation (LFPR)

- a. Rural LFPR: 62.8% (decline)
- b. Urban LFPR: 52.2% (stable)
- c. **Implication:** Reduced workforce engagement

#### 4. Informal Sector Concerns

- a. Wage growth: Only 3.9%
- b. Slowing job creation
- c. **Impact:** Disproportionately affects women

### Q6. Why is reducing the gender wage gap important?

1. **Economic Dimension:** Boosts household incomes and consumption demand. Enhances productivity and economic growth.
2. **Social Dimension:** Promotes gender equality and women empowerment.
3. **Governance Dimension:** Supports inclusive development and Sustainable Development Goals (SDGs).

### Q7. What are the benefits, concerns, and required interventions?

#### 1. Benefits of Current Trends



- Faster wage growth for women
- Increased participation in salaried jobs
- Gradual structural shift in employment

## 2. Persistent Concerns

- Deep wage inequality remains
- High informal sector dependence
- Gender gap in employment levels
- Rising female youth unemployment

## 3. Way Forward (Policy Measures)

- Administrative:** Strengthen labour laws and enforcement of equal pay
- Economic:** Promote women's participation in high-value sectors
- Skill Development:** Targeted skilling and digital literacy programmes
- Social:** Address unpaid care burden through policy support
- Institutional:** Improve access to credit and entrepreneurship
- Legal:** Ensure strict implementation of equal wage provisions

## Conclusion

The PLFS 2025 data reflects **incremental progress but persistent inequality** in India's labour market. Bridging the gender wage gap requires addressing **deep-rooted structural barriers**, ensuring that wage growth translates into **true economic equality and inclusive development**.

## 8. India's Forex Reserves

### Context

Despite India's forex reserves being around **\$710 billion**, concerns have emerged about their **real adequacy** as the rupee weakens amid capital outflows and global pressures.

### Q1. What are forex reserves and what are their components in India?

- Forex reserves** are foreign assets held by the central bank to manage external shocks and currency stability.
- India's reserves consist of four components:
  - Foreign Currency (FX) Assets** – Largest and most liquid component
  - Gold Reserves** – Store of value
  - Special Drawing Rights (SDRs)** – International reserve asset

- IMF Reserve Tranche Position** – Emergency credit line

### Q2. What is the relative importance of different components of forex reserves?

- FX Assets (~\$556 billion)** are the **most important and usable component** for defending the rupee.
- Gold (~\$131 billion)** acts as a **long-term store of value**, but is not easily liquidated quickly.
- SDRs (~\$18.7 billion)** provide a **supplementary buffer** during crises.
- IMF Tranche (~\$4.8 billion)** acts as a **backup financial support mechanism**.
- Thus, **headline reserves can overstate actual usable strength**, as not all components are equally liquid.

### Q3. How does the RBI use forex reserves to defend the rupee?

The RBI uses a **dual strategy** involving:

#### 1. Spot Market Intervention

- RBI **sells foreign currency immediately** in the market.
- This helps **stabilise the rupee** but reduces reserves.
- It also **reduces rupee liquidity**, leading to higher interest rates.

#### 2. Forward Market Intervention

- RBI **commits to sell dollars in the future** instead of immediately.
- This helps stabilise the rupee **without immediate reserve depletion**.
- It avoids tightening liquidity and **prevents interest rate spikes**.

### Q4. Why is the headline forex reserve figure considered misleading?

- Although reserves are high, **net forward liabilities (~\$68 billion)** reduce effective reserves.
- This brings usable reserves to **below \$500 billion**.
- Continued interventions may **further reduce actual availability**.
- Thus, the **headline figure does not reflect true short-term strength**.

### Q5. What are the concerns regarding India's forex reserve adequacy?

- Import cover is declining**, approaching levels seen during the **2013 Balance of Payments crisis**.



2. Rising **oil prices increase import bills**, putting pressure on reserves.
3. **Foreign investor outflows** weaken the rupee further.
4. Persistent intervention may **deplete reserves quickly**.
5. This raises concerns about **external vulnerability and stability**.

### Q6. What is the dilemma faced by the RBI in managing forex reserves?

1. The RBI must choose between:
  - a. **Defending the rupee** through heavy intervention, or
  - b. **Preserving forex reserves** for long-term stability.
2. Excessive intervention can **rapidly deplete reserves**.
3. Allowing depreciation can **increase inflation and import costs**.
4. A **balanced approach** is needed to manage both risks.

### Conclusion

India's forex reserves provide a strong cushion, but their **effective strength depends on usability and external pressures**, requiring prudent and balanced management by the RBI.

## 9. Fiscal Health Index (FHI) Completely Explained

### Context

The NITI Aayog recently released the **second annual edition of the Fiscal Health Index (FHI) 2026** in New Delhi, which evaluates the fiscal performance of Indian states.

### Q1. What is the Fiscal Health Index (FHI)?

1. The **Fiscal Health Index** is a framework developed by NITI Aayog to **assess the fiscal condition and financial management of Indian states**.
2. **Key features:**
  - a. It provides a **systematic and comparable assessment of fiscal performance** across states.
  - b. The index evaluates **18 major states and 10 North-Eastern and Himalayan states**.
  - c. It is designed as a **data-driven tool to measure fiscal stability, encourage reforms, and support evidence-based fiscal policymaking**.

### Q2. What are the key pillars of the Fiscal Health Index?

The index evaluates states based on **five major pillars of fiscal health:**

1. **Quality of Expenditure** – how efficiently states spend public funds.
2. **Revenue Mobilisation** – the ability of states to generate revenue, especially through own taxes.
3. **Fiscal Prudence** – management of fiscal deficits and financial discipline.
4. **Debt Index** – the level of outstanding public debt.
5. **Debt Sustainability** – the ability of states to manage and repay debt without fiscal stress.

### Q3. How are states classified in the Fiscal Health Index?

The index categorises states into **four groups based on their fiscal performance:**

1. **Achievers:** States with **strong fiscal discipline, high own-tax revenue, low fiscal deficits, and manageable debt levels**.
2. **Front Runners:** States with **generally sound fiscal management but weaker performance in one or more indicators**.
3. **Performers:** States showing **mixed results across the five fiscal pillars**.
4. **Aspirational States:** States facing **serious fiscal stress, often characterised by persistent deficits, high debt, and limited revenue generation capacity**.

### Q4. What are the key highlights of the Fiscal Health Index 2026?

1. **Odisha, Goa, and Jharkhand** have been placed in the **Achievers category**.
2. **Karnataka and Telangana** moved from **Front Runner to Performer category**.
3. **Kerala and Tamil Nadu** slipped further into the **Aspirational group**.
4. Among **North-Eastern and Himalayan states:**
  - a. **Arunachal Pradesh** ranked **first**.
  - b. It was followed by **Uttarakhand, Tripura, Meghalaya, Assam, and Mizoram**.

### Conclusion

The **Fiscal Health Index** serves as an important tool for evaluating the **financial performance and fiscal discipline of Indian states**, helping policymakers identify strengths, address weaknesses, and promote sustainable fiscal management across the country.





## SCIENCE AND TECHNOLOGY

### 1. Metabolic Diseases Burden in India

#### Context

A recent analysis of the Global Burden of Disease (GBD) Study 1990–2023 shows that India and China have the highest metabolic disease burdens in the Asia-Pacific region. Rising lifestyle changes, urbanisation, and dietary transitions are driving a rapid increase in metabolic risk factors, posing a major challenge to public health systems and economic productivity.

#### Q1. What are metabolic diseases and why are they a growing public health concern?

- Metabolic diseases are disorders that **disrupt the body's normal metabolic processes**, particularly the way energy from food is broken down and utilised.
- They are strongly linked to **lifestyle and behavioural risk factors**.
- Common metabolic diseases include:
  - Type 2 diabetes mellitus
  - High blood pressure (hypertension)
  - Obesity or high body mass index (BMI)
  - High LDL cholesterol
  - Metabolically-dysfunction-associated steatotic liver disease (MASLD)
- These conditions significantly contribute to **non-communicable diseases (NCDs)** such as heart disease and stroke.
- NCDs are now responsible for a **large share of global deaths**, making metabolic disorders a major global health challenge.

#### Q2. How does the Global Burden of Disease (GBD) Study measure metabolic disease burden?

- The GBD Study analyses disease trends across countries over long periods.
- It uses two key indicators to measure disease burden:
  - Disability-Adjusted Life Years (DALYs):** Combines years lost due to premature death and years lived with disability.
  - Mortality Rate:** Number of deaths caused by specific diseases
- The study identified **five major metabolic risk factors** contributing to disease burden: Type 2 diabetes, High systolic blood pressure, High BMI, High LDL

cholesterol and MASLD (fatty liver disease).

- These indicators help policymakers understand both **health impact and economic burden**.

#### Q3. What is the scale of metabolic disease burden in India?

- India has one of the **largest absolute metabolic disease burdens in the Asia-Pacific region**.
- In **2023**, the country recorded:
  - Around **21 million DALYs** due to type 2 diabetes.
  - Approximately **5.8 lakh deaths** linked to diabetes.
- High systolic blood pressure** accounted for:
  - Nearly **3.8 crore DALYs**.
  - About **15.7 lakh deaths**.
- India overtook **China in DALYs linked to metabolic diseases in 2023**.
- However, under other indicators such as **high BMI, LDL cholesterol, and MASLD**, India still ranks second after China.
- These figures highlight the **scale of the metabolic health crisis** in India.

#### Q4. What factors are driving the rise of metabolic diseases in India?

- Rapid urbanisation** leading to lifestyle changes.
- Sedentary behaviour** due to desk jobs and reduced physical activity.
- Increased consumption of **ultra-processed foods**.
- High intake of **sugar, salt, and unhealthy fats**.
- Rising prevalence of **obesity and high BMI**, increasing at about **2.7–2.9% annually**.
- Growing incidence of **high LDL cholesterol and fatty liver disease**.

These structural lifestyle changes are accelerating the metabolic disease burden.

#### Q5. What are the implications for India's public health and economy?

- Increased **hospitalisation and healthcare expenditure**.
- Rising demand for **long-term chronic disease treatment**.



3. Reduced **workforce productivity** due to illness and disability.
  4. Higher risk of **cardiovascular diseases and other NCDs**.
  5. Additional pressure on **public health infrastructure**.
- If current trends continue, metabolic diseases could become a **major economic and social challenge**.

### Q6. What policy measures are required to address metabolic diseases in India?

1. Promote **healthier diets** by regulating ultra-processed foods and reducing sugar, salt, and unhealthy fats.
2. Introduce **clear front-of-pack nutrition labelling**.
3. Encourage **active urban design**, including walking paths, cycling tracks, and recreational spaces.
4. Expand **screening programmes for diabetes, hypertension, obesity, and fatty liver disease**.
5. Integrate metabolic disease prevention into **primary healthcare systems**.
6. Strengthen coordination between **Union and State health programmes** for uniform implementation.

A multi-sectoral approach combining health, urban planning, and food policy is essential.

### Conclusion

Metabolic diseases are emerging as one of the most significant public health challenges in India, driven by rapid lifestyle and dietary transitions. The findings of the Global Burden of Disease Study underline the urgency of preventive policies and early detection strategies. Addressing metabolic risk factors through coordinated public health interventions will be crucial to reduce India's future disease burden and protect long-term economic productivity.

## 2. Human Metapneumovirus (HMPV)

### Context

The **Human Metapneumovirus** has recently spread rapidly across the **West Coast of the United States**, raising concerns among health authorities about increasing respiratory infections.

### Q1. What is Human Metapneumovirus (HMPV)?

1. It is a **respiratory virus that infects the upper and lower respiratory tract**, with symptoms similar to the common cold.
2. It belongs to the **Pneumoviridae**, virus family which also includes **Respiratory Syncytial Virus**.
3. Researchers estimate that **about 10–12% of respiratory illnesses in children** are associated with

HMPV infections.

### Q2. How does HMPV spread?

1. HMPV is **highly contagious** and spreads mainly through respiratory droplets and close contact.
2. Major transmission routes include:
  - a. **Respiratory droplets** released during coughing or sneezing.
  - b. **Close personal contact**, such as touching or shaking hands with an infected person.
  - c. **Contact with contaminated surfaces**, followed by touching the mouth, nose, or eyes.

### Q3. What symptoms are caused by HMPV?

1. Common symptoms include cough, fever, nasal congestion and shortness of breath.
2. In some cases, the infection may develop into more serious respiratory conditions such as **bronchitis or pneumonia**.
3. Because the symptoms resemble those of other respiratory infections, laboratory testing is sometimes required for confirmation.

### Q4. Who is most at risk from HMPV infection?

1. Most infections are **mild and self-limiting**, but certain groups (like young children, older adults and people with weakened immune systems) face higher risks of severe illness.
2. In these groups, the infection may lead to more severe respiratory complications.

### Q5. What treatment options are available for HMPV?

1. Currently, **there is no vaccine** available for HMPV. **No specific antiviral drug** exists for treating the infection.
2. **Treatment Approach:** Medical care focuses mainly on managing symptoms such as fever and congestion, supporting breathing in severe cases and preventing complications like pneumonia.
3. **General preventive measures** such as **good hygiene, handwashing, and avoiding close contact with infected individuals** help reduce transmission.

## 3. Peptides Explained

### Context

Peptide-based medicines are gaining global attention for their precision in targeting specific biological processes, making them a promising frontier in modern medicine and biotechnology.



### Q1. What are Peptides?

Peptides are **naturally occurring short chains of amino acids**. These amino acids are connected by **peptide bonds** (chemical bonds), forming a **specific sequence**. They play **vital biological roles** and are involved in numerous **physiological processes that sustain life**.

### Q2. What are Amino Acids?

1. Amino acids are **organic molecules that combine to form proteins and peptides**, making them the **basic building blocks of life**. There are **20 different amino acids** used in human proteins.
2. The human body can produce **some amino acids internally**, while others (known as **Essential Amino Acids**) must be obtained through diet (**Nine Essential Amino Acids** - Histidine, Isoleucine, Leucine, Lysine, Methionine, Phenylalanine, Threonine, Tryptophan, and Valine).

### Q3. How are peptides different from proteins?

Basis	Peptides	Proteins
<b>1. Definition</b>	<b>Short chains</b> of amino acids connected by peptide bonds.	Large biomolecules made of <b>long chains</b> of amino acids.
<b>2. Composition</b>	Consist of <b>2–50 amino acids</b> , usually forming a <b>single short chain</b> .	Contain <b>more than 50 amino acids</b> and may consist of <b>multiple peptide chains (polypeptides)</b> .
<b>3. Structure</b>	Generally have <b>simpler and less complex structures</b> .	Exhibit <b>complex structural levels</b> such as secondary, tertiary, and sometimes quaternary structures.
<b>4. Relationship</b>	Can act as <b>smaller units that form proteins</b> .	Can be <b>broken down by enzymes into smaller peptide fragments</b> during digestion.

### Q4. What functions do peptides perform in the body?

1. Human body produces **many different peptides**, each carrying out specific biological roles like:
  - a. Acting as **signalling molecules such as hormones**, which help regulate body processes.
  - b. Supporting **muscle growth and repair**.
  - c. Providing **anti-inflammatory effects**.

d. Influencing processes related to **aging and cellular health**.

2. Because of these biological roles, peptides are increasingly used in **medical treatments and health supplements**, which may be derived from food sources or produced synthetically.

## 4. Akasha300 3D Printer

### Context

A Kerala-based start-up has delivered the Akasha300 3D Printer to Indian Space Research Organisation (ISRO), marking a significant step toward self-reliance in advanced manufacturing technologies.

### Q1. What is the Akasha300 3D Printer?

1. It is a **high-temperature, multi-material extrusion 3D printer**. It means:
  - a. It can work at **very high temperatures**, which allows it to create **strong and durable parts used in industries like space and defence**.
  - b. It is a machine that can **print objects layer by layer using different materials (like plastics or composites)**.
2. It is supported by **Indian Institute of Space Science and Technology (IIST) and Kerala Startup Mission**.
3. Designed as an **industrial-grade research platform** for advanced manufacturing.

### Q2. What are its key features?

1. **Dual-extrusion (two nozzles):** The printer can use **two materials at the same time**. This helps in making **more complex and stronger objects**.
2. **High-temperature capability:** Works at **very high heat (up to 350°C, future 500°C)**. This allows printing of **strong, industrial-grade materials** (not just simple plastic).
3. **Modular design (flexible system):** Parts of the printer can be **changed or upgraded easily**. It can be adapted for **different types of printing techniques in future**.
4. **Temperature-controlled environment:** The printer has a **heated base (bed)** and a **closed chamber that keeps temperature stable**. This prevents defects and ensures **smooth, accurate printing**.
5. **High precision and safety:** Moves very accurately to **build fine details** and has **air filters** to remove harmful fumes which ensures **safe and high-quality output**.

All these features help the printer create **strong, accurate, and reliable parts**, especially useful for **research, space, and advanced industries**.



### Q3. Why is the Akasha300 significant?

1. **Supports R&D:** Helps engineers develop **functional components and prototypes**
2. **Improves precision and speed:** Enhances efficiency in manufacturing processes
3. **Boosts self-reliance:** Reduces dependence on imported high-end 3D printing technology
4. **Applications:** Useful in **space, defence, and advanced engineering sectors**

#### Conclusion

The Akasha300 represents a major step in **India's journey toward indigenous advanced manufacturing**, enabling **high-precision research, innovation, and technological self-reliance**.

## 5. Darknet (Dark Web)

#### Context

The **Narcotics Control Bureau** recently dismantled a pan-India drug trafficking network operating on the **darknet** known as **"Team Kalki."**

#### Q1. What is the Darknet (Dark Web)?

1. It refers to a part of the internet that **cannot be accessed through regular search engines or standard web browsers**.
2. It operates on **special encrypted networks** where users require specific software or configurations to access it. Websites are intentionally hidden and provide **greater anonymity**.
3. Because of this, it is often used for both **privacy-focused communication & illegal activities** (like online drug markets, illegal arms trade, etc.).

#### Q2. What are the different layers of the internet?

The internet can broadly be divided into **three layers**.

1. **Surface Web:** This is the portion of the internet accessible through standard browsers like Chrome or Safari. Websites indexed by search engines such as Google fall into this category. It represents **only about 10% of the total internet**.
2. **Deep Web:** The deep web includes content **not indexed by search engines**. Examples include Online banking pages, Private databases, Academic resources and Subscription-based content. It forms a **large portion of the internet**.
3. **Dark Web:** It is a **small section of the deep web intentionally hidden** and accessible only via specialized tools, often operating on encrypted networks. Eg: **Tor (The Onion Router)**.

## 6. Dark Oxygen

#### Context

Scientists exploring the deep seafloor of the Pacific Ocean have reported the presence of **"dark oxygen"**, a form of oxygen produced in environments where sunlight does not reach. The discovery was made while studying the **Clarion-Clipperton Zone**, a mineral-rich area located between **Mexico and Hawaii**.

#### Q1. What is Dark Oxygen?

1. **Dark oxygen** refers to oxygen produced **deep below the ocean surface without sunlight and without photosynthesis**. Key characteristics include:
  - a. It forms **thousands of feet below the ocean surface**.
  - b. The process occurs in **complete darkness**, where sunlight cannot penetrate.
  - c. Unlike normal oxygen production, it **does not involve plants, algae, or photosynthetic organisms**.
2. This phenomenon challenges the long-held belief that oxygen production requires sunlight-driven photosynthesis.

#### Q2. Where was Dark Oxygen first observed?

1. The phenomenon was first observed in **2013** during deep-sea research.
2. It was detected in the **Clarion-Clipperton Zone** of the Pacific Ocean.
3. This region is known for its large deposits of **polymetallic nodules** scattered across the seafloor.

#### Q3. How is Dark Oxygen produced in the deep ocean?

1. The production of dark oxygen is linked to **polymetallic nodules** found on the ocean floor.
  - a. Polymetallic Nodules are **mineral-rich rock-like structures** composed of **metals** such as Manganese, Iron, Cobalt, Nickel, Copper and Lithium.
2. **Mechanism of Oxygen Production**
  - a. The nodules generate **small electrical charges**.
  - b. These electrical charges trigger **electrolysis**, a process that splits water molecules.
  - c. When water molecules break apart, **oxygen is released** even in the absence of sunlight.

#### Q4. Why is the discovery of Dark Oxygen important?

1. Until now, scientists believed oxygen was produced only through **photosynthesis**. The discovery of dark



- oxygen suggests that **non-biological processes can also produce oxygen**.
- It indicates that **deep-sea ecosystems may have previously unknown oxygen sources**. This could reshape our understanding of **life in extreme environments**.
  - Implications for Space and Astrobiology:** Researchers believe similar processes may occur on **other planets or moons**. If mineral-driven electrochemical reactions can produce oxygen elsewhere, it could create **oxygen-rich environments that may support life beyond Earth**.

## 7. Large Hadron Collider and Xi-cc<sup>+</sup>

### Context

The **Large Hadron Collider (LHC)** has identified a new particle called **Xi-cc<sup>+</sup>**, adding to earlier discoveries like the **Higgs Boson** and exotic hadrons. This strengthens our understanding of the **fundamental structure of matter**.

### Q1. What is the newly discovered particle Xi-cc<sup>+</sup>?

- Xi-cc<sup>+</sup>** is a type of **baryon (a particle made of three quarks)**.
- It is composed of **Two charm quarks + one down quark**
- Comparison:**
  - Proton = 2 up quarks + 1 down quark
  - Xi-cc<sup>+</sup> = 2 charm quarks + 1 down quark
  - Because **charm quarks are heavier than up quarks**, this particle is **about 4 times heavier than a proton**.

### Q2. What are quarks and why are they important?

- Quarks are the **basic building blocks of matter**.
- They come in **six types (flavours):** Up, Down, Charm, Strange, Top, Bottom.
- Quarks are **never found alone**. They always exist in **combinations (like protons, neutrons, or new particles like Xi-cc<sup>+</sup>)**
- Studying such particles helps scientists understand **how matter is formed**.

### Q3. What is the Large Hadron Collider (LHC) and how does it work?

- The LHC is the **world's largest and most powerful particle accelerator**.
- Located about **100 meters underground**, it has a **27 km circular tunnel**.

- How it works:** Two beams of particles (protons/ions) are accelerated to **near light speed** & then **collided with each other**. These collisions create **new particles**, which scientists study.
- Purpose: To understand the **origin of mass**, fundamental forces and concepts like **dark matter and dark energy**.

### Q4. What is CERN (European Organization for Nuclear Research)?

- CERN is the world's leading research centre for particle physics.
- Located on the **France–Switzerland border near Geneva**
- Established in **1954**
- Has **25 member countries** (India is an associate member)

### Conclusion

The discovery of **Xi-cc<sup>+</sup>** highlights how advanced experiments at the LHC continue to **reveal new forms of matter**, helping scientists better understand the **fundamental structure and origin** of the universe.

## 8. Waste Foundry Sand

### Context

The **Institute of Indian Foundrymen (IIF)** and **CSIR-CRRI** have collaborated to promote the use of **waste foundry sand (WFS)** in road construction, supporting sustainable infrastructure.

### Q1. What is Waste Foundry Sand (WFS)?

- It is a **byproduct generated during metal casting processes**, primarily composed of **high-quality silica sand** and produced from both **ferrous and non-ferrous metal industries**.
- Its properties vary depending on the **casting process and industrial usage**.

### Q2. How is foundry sand classified?

Foundry sand is classified based on the **type of binder system used in casting**.

- Clay-bonded (Green Sand)**
  - Made from **natural materials**.
  - Composition includes **Silica sand (85–95%)** and **Bentonite clay (4–10%)** as a binder.
  - Commonly used in traditional molding processes.
- Chemically Bonded Sand**
  - Uses **chemical binders** for higher strength.
  - Used in **core making and molds** where resistance to high temperatures is required.



### Q3. What are the environmental concerns associated with Waste Foundry Sand?

1. Large-scale generation leads to **disposal challenges**.
2. Improper disposal can cause **soil and groundwater contamination**.
3. It occupies **significant landfill space**.
4. Potential presence of **toxic elements from industrial processes**.

### Q4. What is the significance of reusing Waste Foundry Sand?

1. It supports **resource efficiency and circular economy principles**.
2. Reduces **burden on landfills and environmental pollution**.
3. Provides a **cost-effective alternative material** for construction.
4. Aligns with **sustainable development and waste minimisation goals**.

### Q5. How can Waste Foundry Sand be used in road construction?

1. It can be used as a **partial replacement for natural sand in road sub-base and embankments**.
2. Improves **strength and durability of road layers**.
3. Reduces dependence on **natural aggregates and river sand**.
4. Helps in **sustainable infrastructure development**.

## Conclusion

The reuse of waste foundry sand offers a **sustainable solution for industrial waste management**, contributing to **eco-friendly infrastructure and resource conservation**.

## 9. SWOT Satellite

### Context

NASA has used data from the **SWOT (Surface Water and Ocean Topography) satellite** to create a new high-resolution map of the ocean floor, enhancing understanding of Earth's water systems.

### Q1. What is the SWOT Satellite?

1. It is an **Earth observation satellite launched in 2022** as a **joint mission of NASA & CNES (France)**.
2. Its main objective is to **measure changes in Earth's water bodies over time**.
3. It provides detailed data on **oceans, rivers, lakes, and reservoirs**.

### Q2. What are the key features of the SWOT

### Satellite?

1. It uses the **Ka-band Radar Interferometer (KaRIn)** to measure water surface height & elevation.
2. It tracks **width, depth, and flow of water bodies** with high precision.
3. It provides **high spatial resolution data** by using microwave signals.
4. It can scan about **90% of Earth's surface every 21 days**.
5. It covers **over 55% of global floods during their lifecycle**.

### Q3. How does the SWOT Satellite work?

1. It sends **microwave radar signals** towards Earth's surface.
2. The signals bounce back from water bodies, and the **return time is measured**.
3. This helps calculate **surface height and movement of water**.
4. It can detect **small variations in elevation**, even in ocean currents and eddies.

### Q4. What is the significance of the SWOT Satellite?

1. It improves understanding of **global water cycles and climate change**.
2. It helps in **monitoring floods, droughts, and water availability**.
3. It enhances mapping of **ocean currents and underwater features**.
4. It supports research on **heat and carbon absorption by oceans**.
5. It aids in **water resource management and disaster preparedness**.

### Q5. What is the coverage and capability of SWOT Satellite?

1. It can observe **nearly all rivers wider than 330 feet**.
2. It monitors over **1 million lakes and reservoirs larger than 5 acres**.
3. It provides **global-scale data with high precision and frequency**.
4. It captures **fine-scale ocean features like currents and eddies**.

## Conclusion

The SWOT satellite marks a major advancement in **global water monitoring**, enabling better understanding of **climate change, ocean dynamics, and water resource management**.





# GEOGRAPHY AND ENVIRONMENT

## 1. State of India's Environment Report 2026

### Context

The State of India's Environment Report 2026 was released by the Centre for Science and Environment.

### Q1. What is the State of India's Environment Report?

- The **State of India's Environment report** is an annual assessment **published since 1982** that:
  - Provides a comprehensive overview of **environmental conditions & challenges in India**.
  - Tracks trends related to **climate change, natural disasters, wildlife, and pollution**.
  - Analyses how global environmental changes affect India's ecosystems, economy, & society.
- The report also warns that **global temperature rise may exceed the 1.5°C threshold**, indicating that the world is approaching a **critical climate tipping point**.

### Q2. What does the report reveal about extreme weather events in India?

- Report highlights that **extreme weather events** (like heatwaves, cold waves, heavy rainfall and floods) are becoming **more frequent & more damaging**.

Year	Frequency of Events	Deaths	Crop Area Affected
2025	Events on 99% of days	4,419	17.41 million hectares
2024	Events on 88% of days	3,393	3.61 million hectares
2023	Events on 89% of days	3,208	2.09 million hectares

This trend shows that **climate-related disasters are intensifying in India**.

- Some states experienced a particularly high number of extreme weather days:
  - Himachal Pradesh** – 267 days
  - Kerala** – 173 days
  - Madhya Pradesh** – 162 days

### Q3. Why are flood risks increasing in India as per State of India's Environment Report 2026 ?

- The report states that **climate change is increasing the intensity and frequency of floods**.
- Key Reasons**
  - Rising temperatures are altering **rainfall patterns and river flows**.
  - Rapid urbanisation is increasing pressure on **urban infrastructure and drainage systems**.
  - Settlements and infrastructure development near rivers increase vulnerability.
- Policy Recommendation:** India must shift from **post-disaster relief to pre-disaster resilience**, by integrating climate science into infrastructure design, land-use planning and flood management strategies.
- The report emphasises **nature-based solutions** for improving climate resilience and flood management like
  - Restoration of wetlands** to absorb excess floodwater.
  - Reconnecting rivers with floodplains** to improve natural water flow.
  - Groundwater recharge and rainwater harvesting**.
  - Restoration and construction of lakes** to store excess rainfall.
- These approaches strengthen natural ecosystems while reducing disaster risks.

### Q4. What changes in tiger behaviour were observed by the report?

- The report highlights a rise in human deaths caused by tiger attacks. Between **January and June 2025**, at least **43 people were killed** near tiger reserves. In the same period in **2024**, **44 people were killed** in tiger attacks.
- Reasons Behind Tiger Attacks:**
  - Tigers may attack humans when they become **old, injured, or unable to hunt natural prey**. Declining prey availability can also increase attacks.
  - Human-Tiger Proximity:** Increasing interaction between human settlements and tiger habitats is a major factor as many villages are located close to forest areas.



- c. **Habitat Pressure and Population Growth:** India's tiger population is increasing, but many reserves are reaching **saturation levels**. Around **40% of tiger territory in 20 states overlaps with areas inhabited by nearly 60 million people**. As a result, tigers are moving outside protected areas, leading to greater human–wildlife conflict.

### Q5. What gaps exist in India's air pollution monitoring system?

The report highlights major gaps in air quality monitoring.

1. Only **15% of India's population (around 200 million people)** live within **10 km of a continuous air quality monitoring station**. The remaining **85% of the population (over 1.2 billion people)** live outside the monitoring range.
2. **Monitoring Concentrated in Major Cities:** Air quality monitoring is mostly limited to major cities, state capitals and metropolitan regions. As a result, many **districts, industrial belts, and peri-urban areas** lack reliable air pollution data.
3. **Environmental Governance Inequality:** The report notes that this is not just a data gap but also reflects **structural inequality in environmental governance**, as many smaller towns with significant pollution sources remain unmonitored.

### Conclusion

The State of India's Environment Report 2026 highlights the growing environmental challenges facing India, including rising extreme weather events, increasing flood risks, wildlife conflicts, and gaps in air pollution monitoring. These trends underline the urgent need for stronger climate action, improved environmental governance, and nature-based solutions to build a resilient and sustainable future.

## 2. Doomsday Fish (Oarfish)

### Context

Two giant **Oarfish**, often called "**doomsday fish**," were recently sighted near the coast of **Cabo San Lucas**.

### Q1. What is the Doomsday Fish?

1. It is a rarely observed deep-sea fish (as it typically lives far below the ocean surface), which is considered **one of the longest bony fish species in the world**.
2. **Scientific name:** Regalecus glesne

### Q2. Where do Oarfish live?

1. They mainly inhabit the **mesopelagic zone of the ocean** (also called "**twilight zone**" because sunlight penetration is minimal) which extends roughly **200–1,000 metres below the ocean surface** and is home

to many deep-sea organisms adapted to low-light environments.

2. Because oarfish live in this deep region, they **rarely approach coastal waters**, making sightings unusual.

### Q3. What are the main physical features of the Oarfish?

1. **Long ribbon-like body** that can reach up to **30 feet (around 9 metres)**.
2. **Bright red dorsal spines**, forming a crown-like structure on the head.
3. **Large eyes** adapted for dim deep-sea conditions.
4. **Silvery reflective body**, which helps it blend with surrounding light in deep water.
5. Another notable feature is its **vertical swimming posture**, where the fish sometimes floats upright in the water column.

### Q4. What does the Oarfish eat?

1. The oarfish is a **filter feeder**. It feeds by filtering small organisms from the surrounding water, which are abundant in deep-sea ecosystems.
2. Its diet mainly includes **Krill, Plankton and Small crustaceans**.

### Q5. Why is the Oarfish called the "Doomsday Fish"?

1. The nickname originates from **folklore linking oarfish sightings to natural disasters**.
2. In Japanese tradition, the fish is known as "**Ryugu no tsukai**," meaning "**Messenger from the Sea God's Palace**." According to folklore, the appearance of oarfish near the surface may signal **earthquakes or other disasters**.
3. However, scientists emphasize that **no scientific evidence supports a link between oarfish sightings and natural disasters**.

### Conclusion

The oarfish is a **fascinating deep-sea species** known for its **extraordinary length & unusual appearance**. Although **cultural traditions** have associated it with **disaster predictions**, scientific understanding views it as an **important species for studying deep-ocean ecosystems & marine biodiversity**.

## 3. Heatwaves to Hailstorms

### Context

India experienced unusual weather in March 2026, shifting rapidly from heatwaves to thunderstorms, hailstorms, and

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rainfall, raising concerns about climate variability and extreme weather patterns.

### Q1. What was the unusual weather pattern?

1. March is a **transition month (winter → summer)**, naturally prone to instability.
2. However, this year showed **high variability within a short period**:
  - a. Early **heatwaves** in north and west India
  - b. Followed by **sudden cooling, rainfall, and hailstorms**
3. This reflects **intense atmospheric interactions**.

### Q2. Why did such extreme weather occur?

1. **Western Disturbances (Primary Factor)**: These are the **moisture laden winds from Mediterranean, Black and Caspian Sea**. These were **weak earlier** which caused **dry heat** but became **strong mid-march** triggering **rainfall and storms**.
2. **Cyclonic Circulation**: Low-pressure systems in lower atmosphere increased **instability and storm formation**.
3. **Moisture Influx**: Winds from **Bay of Bengal and Arabian Sea** raised **humidity levels**.
4. **Wind Convergence**: Interaction of **warm moist winds and cold winds** led to **thunderstorms and hailstorms**
5. **Seasonal Transition Effect**: Rising heat + leftover winter cold → ideal for **convection (storm development)**
6. **Nor'westers (Kalbaisakhi)**: Local storms in eastern India causing **heavy rain, strong winds, and lightning**.

### Q3. Why were hailstorms widespread?

1. **Strong upward air currents (updrafts)**: Warm air near the surface rises rapidly, carrying water droplets high into the atmosphere.
2. **Freezing at higher altitudes**: At higher levels, temperatures are very low, so these droplets **freeze into ice particles**.
3. **Growth of hailstones**: These ice particles move up and down repeatedly in the cloud, adding more layers of ice and becoming larger.
4. **Heavy and widespread fall**: Once they become too heavy, they **fall as hailstones over large areas**, especially where moisture and instability are high.

### Q4. What are the implications of such weather events?

1. **Agriculture**: Crop damage due to hailstorms
2. **Disaster risks**: Lightning and strong winds
3. **Health impacts**: Sudden temperature fluctuations

### 4. Climate signal: Increasing weather unpredictability and variability

### Conclusion

The shift from **heatwaves to hailstorms** highlights rising **climate variability and complex atmospheric interactions**, making it essential to improve **forecasting, preparedness, and resilience systems**.

## 4. Neoloboptera Peninsularis

### Context

Researchers from the **Zoological Survey of India (ZSI)** have discovered a new cockroach species, *Neoloboptera peninsularis*, in the **Deccan Peninsula** using DNA-based identification.

### Q1. What is *Neoloboptera peninsularis*?

1. It is a **newly discovered species of cockroach** belonging to the genus *Neoloboptera*.
2. The species name "**peninsularis**" reflects its origin in **Peninsular India**.

### Q2. Where was this species discovered?

1. It was discovered in the **Deccan Peninsula**, specifically in **Pune district of Maharashtra**.
2. The insect was found in **Nathachiwadi village**.
3. Its habitat includes **palm shrubs and dry leaf litter** near agricultural land.

### Q3. What is the scientific significance of this discovery?

1. It marks the **first use of modern DNA technology** in India to identify a cockroach species.
2. It is only the **third known species of the genus *Neoloboptera* in India**.
3. The discovery fills a **long gap in taxonomic records**, as no new specimen-based record had been reported for this genus in decades.
4. It highlights the importance of **advanced genetic tools in biodiversity identification**.

### Q4. What are the distinguishing features of *Neoloboptera peninsularis*?

1. It has a **glossy, yellowish-brown body**.
2. The species possesses **fully developed wings**.
3. It shows **asymmetrical cerci** (paired appendages at the rear).
4. It has a **distinctive whip-like male genital structure**, useful for species identification.



### Q5. What is the significance of the genus *Neoloboptera* in India?

1. It is a **rarely recorded genus** with very limited species in India.
2. Earlier species include: *Neoloboptera indica* (1865) and *Neoloboptera chakrabortyi* (1995).
3. The new discovery adds to **India's biodiversity records and entomological knowledge**.

#### Conclusion

The discovery of *Neoloboptera peninsularis* highlights the richness of India's biodiversity and the growing role of **modern scientific tools in uncovering hidden species**.

## 5. Global Initiative on the Taking of Migratory Species (GTI)

#### Context

The Global Initiative on the Taking of Migratory Species (GTI) was launched at COP15 of the Convention on Migratory Species (CMS) in Brazil to address threats from illegal and unsustainable exploitation.

### Q1. What is the Global Initiative on the Taking of Migratory Species (GTI)?

GTI is a **global collaborative initiative** involving governments, conservation organisations, and local communities with the aim to address the **illegal and unsustainable "taking"** (hunting, fishing, trade, etc.) of migratory species. It responds to growing concerns highlighted in global biodiversity assessments.

### Q2. Why was the GTI launched?

1. The **State of the World's Migratory Species Report (2024)** found that nearly **70% of 1,200 CMS-listed species are threatened** by illegal or unsustainable exploitation.
2. **Major drivers:** Hunting & fishing for food, commercial sale & trade, and sport & medicinal use.
3. There was a need for **coordinated global action** to address these threats.

### Q3. What are the objectives of the GTI?

1. To help countries **meet biodiversity commitments** under global frameworks.
2. To support **species recovery and prevent extinction**.
3. To align with the **Kunming–Montreal Global Biodiversity Framework**.
4. To promote **sustainable use and conservation of migratory species**.

### Q4. What are the 4 key focus areas of the GTI?

1. **Improving data collection and monitoring** of migratory species.
2. **Strengthening legal and policy frameworks** to prevent illegal activities.
3. **Enhancing community engagement**, especially local and indigenous participation.
4. **Raising awareness** about conservation and sustainable practices.

### Q5. Which organisations are involved in the GTI?

1. Convention on Biological Diversity (CBD)
2. United Nations Environment Programme (UNEP)
3. UNEP World Conservation Monitoring Centre (UNEP-WCMC)
4. World Wide Fund for Nature (WWF)
5. TRAFFIC (wildlife trade monitoring network)

### Q6. What is the Convention on the Conservation of Migratory Species (CMS)?

1. It is an **international treaty** established in **1979** in Bonn, Germany (also called **Bonn Convention**).
2. It operates under the **United Nations Environment Programme (UNEP)**.
3. It focuses on **conserving migratory species and their habitats across borders**.
4. It currently has **133 Parties (including India and the EU)**.

### Q7. How are species classified under CMS?

1. **Appendix I:** Includes **endangered migratory species**. Requires **strict protection and conservation measures**.
2. **Appendix II:** Includes species that need **international cooperation for conservation**.

#### Conclusion

The GTI marks an important step towards **global cooperation in protecting migratory species**, but its success depends on **strong enforcement, data-driven policies, and community participation**.

## 6. *Euthalia zubeengargi*

#### Context

A new butterfly species, *Euthalia zubeengargi*, has been discovered in **Arunachal Pradesh**, highlighting the rich biodiversity of Northeast India.



### Q1. What is *Euthalia zubeengargi*?

1. It is a **new butterfly species** (genus *Euthalia*), commonly found in **South & Southeast Asia**.
2. It is found in **Arunachal Pradesh**.
3. It inhabits **semi-evergreen forests** and is typically found at elevations of **600–750 metres**.
4. It prefers **cool, shaded forest interiors**.

### Q2. What are the key behavioural and physical features of *Euthalia zubeengargi*?

1. It has **earthy brown wings with pale spots**, typical of the genus.
2. It is usually seen **resting on low vegetation**.
3. It feeds on **tree sap and minerals from damp surfaces near streams**.
4. It is most active during **late morning to early afternoon**.
5. It makes **short and slow flights between nearby plants**.

### Q3. What is the ecological importance of butterflies?

1. Butterflies act as **bio-indicators of environmental health**.
2. Their presence reflects **ecosystem stability and biodiversity levels**.
3. They play a role in **pollination and food chains**.
4. Changes in butterfly populations signal **climate change or habitat degradation**.

### Conclusion

The discovery of *Euthalia zubeengargi* underscores the importance of **protecting fragile ecosystems**, as they continue to reveal new species vital for ecological balance.

## 7. Amrabad Tiger Reserve

### Context

The Telangana government has initiated **rehabilitation and relocation of tribal families** from the Amrabad Tiger Reserve to balance **tribal development with wildlife conservation**.

### Q1. What are the key geographical features of the Amrabad Tiger Reserve?

1. The Amrabad Tiger Reserve is located in the **Nallamala Hills of the Eastern Ghats in Telangana**.
2. It was earlier part of **Nagarjunasagar–Srisailem Tiger Reserve** before state bifurcation in 2014.

3. The region is known for its **rugged terrain, deep valleys, and dense forest cover**.
4. The **Krishna River and its tributaries** flow through the reserve, supporting major reservoirs like **Srisailem and Nagarjunasagar**.

### Q2. What is the ecological significance of the Amrabad Tiger Reserve?

1. It is one of the **largest tiger habitats in southern India**, contributing to tiger conservation.
2. The reserve supports **rich biodiversity**, including predators, herbivores, and diverse bird species.
3. It plays an important role in **maintaining ecological balance in the Eastern Ghats**.
4. The forests act as a **carbon sink and climate regulator**, supporting environmental sustainability.
5. It provides **water security** by sustaining river systems and reservoirs.

### Q3. What are the major flora and fauna found in the Amrabad Tiger Reserve?

1. **Flora**
  - a. The reserve mainly consists of **dry deciduous forests**.
  - b. Dominant vegetation includes **teak, bamboo, acacia, sal and other native species**.
  - c. It is rich in **medicinal plants**, traditionally used by tribal communities.
2. **Fauna**
  - a. Key predators include **leopards and wild cats**.
  - b. Herbivores include **sambar, chital, nilgai, wild boar, and gaur (Indian bison)**.
  - c. The reserve hosts **over 300 bird species**, including eagles, cuckoos, woodpeckers, and drongos.

### Q4. Who are the tribal communities living in the Amrabad Tiger Reserve and what is their significance?

1. The **Chenchu tribe** is the primary tribal community residing in the reserve.
2. They are a **particularly vulnerable tribal group (PVTG)** with a deep connection to forests.
3. Their livelihood depends on **forest resources, hunting, and gathering**.
4. They possess **traditional ecological knowledge**, especially about medicinal plants and wildlife.
5. Their presence highlights the need to balance **conservation with tribal rights and welfare**.



## Conclusion

The Amrabad Tiger Reserve highlights the need to balance **biodiversity conservation with tribal rights**, ensuring that development and sustainability go hand in hand.

## 8. Aghanashini River

### Context

UNESCO has advised that the proposed Aghanashini–Vedavathi river linking project must follow World Heritage conservation norms, highlighting the ecological importance of the Aghanashini River.

### Q1. Where is the Aghanashini River and what are its key features?

1. **Origin:** Gadihalli (Sirsi) in the **Western Ghats of Karnataka** at ~676 m altitude
2. **Length:** ~117 km
3. **Drainage area:** ~1449 sq. km
4. **Mouth:** Flows into the **Arabian Sea at Tadri (Karnataka)**
5. **Meaning of name:** “Aghanashini” = **Remover of sins**
6. It is one of the **few remaining free-flowing (undammed) rivers in the world.**

### Q2. What are its physical and geographical characteristics?

1. **Tributaries:** Donihalla, Chandika hole, Masti mane halla, Benne hole
2. **Waterfalls formed due to terrain variation:** **Unchalli Falls**, Dabbe Falls, Burude Falls, etc.
3. **Rainfall pattern:** Receives **orographic rainfall** which ranges from **~2500 mm (plains) to >6300 mm (Ghats).**

### Q3. Why is the Aghanashini River ecologically important?

1. Remains **undammed**, preserving natural river flow
2. Supports **rich biodiversity** in the Western Ghats
3. Forms the **Aghanashini Estuary** near the sea:
  - a. Rich in **mangroves**
  - b. Habitat for **fish, birds, and aquatic life**
4. The estuary is recognised as a **Ramsar Site**
5. It is a **rare example of a healthy, natural river ecosystem.**

## Conclusion

The Aghanashini River is a **unique free-flowing river**

**system with high ecological value**, and any development project must carefully balance **infrastructure needs with environmental conservation.**

## 9. Prosopis juliflora (Invasive Species)

### Context

The **Madras High Court** recently issued **34 directions** for the **eradication of Prosopis juliflora** from Tamil Nadu due to its harmful ecological impact.

### Q1. What is Prosopis juliflora?

1. It is a **shrub or small tree** belonging to the **Fabaceae (mesquite) family.**
2. Native to **Mexico, South America, and the Caribbean.**
3. Introduced in India during the **1920s by the British**, including in Delhi.
4. Known by various local names like **vilayati kikar, seemai karuvelam, gando baval, Bellary jaali.**
5. It is now considered one of the **most invasive species in arid and semi-arid regions.**

### Q2. Why is Prosopis juliflora highly invasive?

1. **High adaptability:** Can grow in diverse soils—from **sand dunes to clay**, and even in **saline or alkaline conditions.**
2. **Wide climatic tolerance:** Survives across **low to high rainfall regions** and varied altitudes.
3. **Rapid growth:** Shows **aggressive spread**, outcompeting native vegetation.

### Q3. What are the environmental impacts of Prosopis juliflora?

1. **Excessive water consumption:** Uses **large amounts of groundwater**, depleting water resources.
2. **Soil and water impact:** Can **degrade groundwater quality.**
3. **Loss of biodiversity:** Replaces **native grasses and plants**, destroying natural habitats.
4. **Ecosystem imbalance:** Leads to **land degradation & erosion** due to disappearance of grasslands.
5. **Poor ecological support:** Provides **limited shelter for birds and fauna.**

## Conclusion

Prosopis juliflora is a **highly invasive species** that disrupts ecosystems, depletes resources, and threatens biodiversity, making its **control and eradication essential for ecological restoration.**





## SOCIETY AND CULTURE

### 1. Childhood Obesity in India

#### Context

According to the **World Obesity Atlas 2026**, India has ranked **second globally** in the number of children living with overweight and obesity. The report highlights the growing burden of obesity among children and adolescents and warns about its long-term health consequences.

#### Q1. What are the global trends in childhood obesity?

1. Childhood obesity has become a major global public health challenge over the last two decades.
2. Key global trends include:
  - a. More than **one in five children aged 5–19 years worldwide are overweight or obese**.
  - b. The global prevalence increased from **14.6% in 2010 to about 20.7% in 2026**.
  - c. Over **200 million school-age children who are overweight or obese** are concentrated in just ten countries.
  - d. **China, India, and the United States** account for a significant share of the global burden.
  - e. The **World Obesity Federation** estimates that **about 507 million children worldwide could be overweight or obese by 2040**.
3. These trends indicate that childhood obesity is no longer limited to high-income countries and is rapidly rising in developing and middle-income nations.

#### Q2. What is India's ranking and current situation regarding childhood obesity?

1. India currently ranks **second globally after China** in the number of children living with overweight and obesity.
2. Key statistics from the World Obesity Atlas 2026 include:
  - a. Around **41 million children in India have a high Body Mass Index (BMI)**.
  - b. Approximately **14 million children are living with obesity**.
3. Age-wise distribution shows:

- a. Nearly **14.9 million children aged 5–9 years** are overweight or obese.
  - b. More than **26 million adolescents aged 10–19 years** are overweight or obese.
4. Although India ranks high globally, experts note that the country's **large population size contributes significantly to this ranking**.
  5. Within the **World Health Organization South-East Asia Region**, India has the **highest number of children and adolescents affected by overweight and obesity**.

#### Q3. What are the future projections for childhood obesity in India?

1. The World Obesity Atlas projects a significant increase in childhood obesity in India between **2025 and 2040**.
2. Key projections include:
  - a. Around **20 million children in India may be living with obesity by 2040**.
  - b. Nearly **56 million children are expected to be overweight or obese** by the same period.
3. Associated health risks are also projected to rise:
  - a. **BMI-related hypertension cases** may increase from **2.99 million to 4.21 million**.
  - b. **Hyperglycaemia cases** may increase from **1.39 million to 1.91 million**.
  - c. **High triglyceride levels**, a risk factor for cardiovascular disease, may increase from **4.39 million to 6.07 million**.
4. These projections suggest that childhood obesity could significantly increase the burden of **non-communicable diseases (NCDs)** in India.

#### Q4. What are the health implications of childhood obesity?

1. Childhood obesity exposes children and adolescents to several serious health risks.
2. Major health implications include **Hypertension, Cardiovascular diseases, Type 2 diabetes** and **Metabolic disorders**.
3. According to projections:
  - a. Over **57 million children may show early signs of cardiovascular disease by 2040**.
  - b. More than **43 million children may develop**



**hypertension symptoms.**

4. Additionally, children with obesity are more likely to **remain obese in adulthood**, increasing the risk of chronic diseases and creating long-term health and economic burdens.

**Q5. What factors are contributing to the rise of childhood obesity in India?**

1. Several lifestyle, nutritional, and social factors are contributing to the increasing prevalence of obesity among children.
2. **Key contributing factors** include:
  - a. **Low Physical Activity:** About **74% of adolescents aged 11–17 years do not meet recommended physical activity levels.**
  - b. **Poor Dietary Patterns:** Increased consumption of **processed foods, junk food, and sugary beverages** leads to excessive calorie intake.
  - c. **Limited School Nutrition Coverage:** Only **35.5% of school-age children receive school meals**, indicating gaps in nutrition programmes.
  - d. **Early-Life Nutrition Challenges:** Around **32.6% of infants experience sub-optimal breastfeeding**, which may increase obesity risk later in life.
  - e. **Maternal Health Risks:** About **13.4% of women aged 15–49 have high BMI**. Around **4.2% of women in this age group have Type 2 diabetes**, which can influence childhood obesity risk.
3. These factors show that childhood obesity is shaped by a combination of **lifestyle behaviours, nutritional habits, and broader social determinants of health.**

**Q6. What policy measures and prevention strategies are recommended?**

1. The **World Obesity Federation** recommends a comprehensive policy response to tackle childhood obesity.
2. **Key measures** include:
  - a. Creating **healthier school food environments.**
  - b. **Restricting marketing of unhealthy foods** to children.
  - c. Introducing **taxes on sugar-sweetened beverages.**
  - d. Promoting **regular physical activity among children.**
  - e. Protecting and promoting **exclusive breastfeeding practices.**

- f. Integrating **obesity prevention strategies into primary healthcare systems.**

3. Experts also emphasise **early screening, monitoring, and intervention** to identify at-risk children and provide timely healthcare support.

**Conclusion**

Childhood obesity is rapidly emerging as a **major public health concern in India and across the world**. India's **second-place global ranking** highlights the scale of the challenge, especially given the country's large population and changing lifestyle patterns. Addressing childhood obesity requires a combination of **improved nutrition policies, increased physical activity, early health interventions, and strong public awareness** to prevent a future surge in non-communicable diseases.

**2. Navroz (Parsi New Year)****Context**

The Prime Minister of India recently extended greetings on the occasion of **Navroz**, celebrated by the Parsi community.

**Q1. What is Navroz?**

1. **Navroz (Nowruz)** is the **Persian/Iranian New Year**.
2. The word comes from Persian:
  - a. **'Nov'** = New
  - b. **'Roz'** = Day → meaning **"New Day"**.
3. It marks the **beginning of spring** and is celebrated with enthusiasm by the **Parsi community worldwide**.

**Q2. What is the historical background of Navroz?**

1. Its origins lie in the **ancient Persian Empire** and the **Zoroastrian calendar**, where it was considered a **sacred festival**.
2. The festival is associated with the legendary Persian king **Jamshed**, after whom the **Shahenshahi calendar** is named.
3. It was introduced in India in the **18th century** by **Nusservanji Kohyaji**, a trader from Surat who brought the tradition from Iran.
4. Navroz is recognised as part of the **UNESCO Intangible Cultural Heritage of Humanity of India**.

**Conclusion**

Navroz represents the **arrival of spring, renewal, and cultural continuity**, reflecting the rich **Persian and Zoroastrian heritage** preserved by the **Parsi community**.





# HISTORY

## 1. Guru Angad Dev Ji

### Context

The Union Home Minister recently paid tributes to **Guru Angad Dev** on the occasion of his **Jyoti-Jyot Diwas**, commemorating his legacy in Sikh history.

### Q1. Who was Guru Angad Dev Ji?

1. Born as **Lahna** in **1504** at Matte-di-Sarai (Punjab).
2. Became the **second Sikh Guru (1539–1552)** after **Guru Nanak Dev**.
3. Played a key role in **institutionalising and expanding Sikh teachings**.

### Q2. What were the major contributions of Guru Angad Dev Ji?

1. **Standardisation of Gurmukhi Script:** Developed and promoted the **Gurmukhi script**, giving a uniform written form to Punjabi.
2. **Spread of Sikh Teachings:** Strengthened and expanded the teachings of **Guru Nanak Dev Ji** across regions.
3. **Promotion of Education:** Established **schools at Khadur Sahib** to teach Gurmukhi. Improved **literacy among the Sikh community**.
4. **Social and Physical Development:** Encouraged **physical fitness (sports, wrestling)** along with **moral discipline and truthful living**.
5. **Religious Contributions:** Composed **62 hymns in 10 ragas**. Strengthened the **Langar system** (community kitchen), promoting equality and service.
6. **Institution Building:** Established numerous **Sangats (religious centres)**, helping in the organised growth of Sikhism.

### Conclusion

Guru Angad Dev Ji played a crucial role in **strengthening the foundation of Sikhism through language, education, and institutions**, ensuring the wider spread and continuity of Guru Nanak's teachings.

## 2. Rani Avanti Bai Lodhi

### Context

**Rani Avanti Bai Lodhi** was recently remembered on her **martyrdom day**, highlighting her role in the **Revolt of 1857**.

### Q1. Who was Rani Avanti Bai Lodhi?

1. Born on **16 August 1831** in **Mankedi village, Seoni district (Madhya Pradesh)**.
2. Married **Vikramaditya Singh Lodhi**, prince of **Ramgarh State (present-day Dindori, MP)**.
3. After the death of Raja Laxman Singh and due to her husband's ill health, she **assumed control of the Ramgarh kingdom**.

### Q2. What role did she play in the Revolt of 1857?

1. When the British attempted to annex her state under the **Doctrine of Lapse**, she **resisted colonial authority**.
2. She **organised and led her own army** against the British.
3. In the **Battle of Kheri (1857)**, she successfully **defeated British forces**.
4. She adopted **guerrilla warfare tactics**, using her skills in **horse riding and swordsmanship**.

### Q3. How did her life end?

1. During a British offensive, she chose to **sacrifice her life rather than surrender**.
2. She died on **20 March 1858**, becoming a symbol of resistance and patriotism.

### Q4. What values does she represent?

1. Bravery and courage
2. Leadership in warfare
3. Resilience and determination
4. Patriotic spirit and sacrifice

### Conclusion

Rani Avanti Bai Lodhi remains a symbol of **valour and resistance during the 1857 revolt**, inspiring generations through her **courage, leadership, and supreme sacrifice for the nation**.





# LATEST GOVERNMENT SCHEMES

## 1. UDAN Scheme Revamp

### Context

The Union Cabinet has approved a revamped UDAN (Ude Desh ka Aam Nagrik) scheme with higher funding, extended subsidies, and a shift in financing. The reform aims to address **route viability, regional connectivity, and aviation sustainability challenges.**

### Q1. What is the UDAN Scheme and its objectives?

1. Launched in 2017 under **Regional Connectivity Scheme (RCS)**
2. **Objective:** Connect underserved and unserved regions, make air travel affordable, promote balanced regional development and utilise underused airports.
3. **Focus areas:** Tier-2 and Tier-3 cities along with remote, hilly, and island regions.

### Q2. What are the key features of the scheme?

1. **Competitive bidding:** Airlines selected for specific routes
2. **Viability Gap Funding (VGF):** Subsidy to airlines for low-demand routes
3. **Fare cap:** ~₹2,500 per hour for 50% seats
4. **Infrastructure utilisation:** Revival of unused airstrips and airports

### Q3. What has the scheme achieved so far?

1. 600+ routes operationalised
2. 90+ airports revived
3. **Improved connectivity** especially in North-East, hilly and remote regions.
4. **Enhanced** regional mobility and economic integration.

### Q4. What were the major challenges in the earlier scheme?

1. **Economic Viability Issues:** Most routes were not viable even after subsidy. Only 7–10% routes sustained post-subsidy,
2. **High Discontinuation Rate:** 327 out of 663 routes

discontinued. Over 90% routes became inactive after support ended.

3. **Demand Constraints:** Low passenger load in smaller regions
4. **Operational Issues:** Infrastructure gaps and airline financial stress.

### Q5. What are the key changes in the revamped UDAN scheme?

1. **Increased Funding:** Total outlay is around ₹28,840 crore which is nearly a six-fold increase.
2. **Extended Subsidy Period:** From 3 years → 5 years. Aims to improve long-term viability.
3. **Shift in Funding Source:** From RCS levy → direct government funding. Reduces burden on airlines.
4. **Focus on Operations:** Support for maintenance and sustained operations. Shift from just infrastructure creation.

### Q6. How does the revamp strengthen infrastructure and connectivity?

1. **Airport Expansion:** 100 new airports to be redeveloped
2. **Operational Support:** 441 aerodromes supported
3. **Last-Mile Connectivity:** 200 helipads planned with focus on remote and inaccessible regions.
4. **Fleet Strengthening:** HAL Dhruv helicopters (Pawan Hans) and HAL Dornier aircraft (Alliance Air).

### Q7. What are the implications of the revamped scheme?

1. **Administrative Impact:** Stronger government role in funding and improved coordination in regional aviation.
2. **Economic Impact:** Boost to regional economies leading to increased tourism and trade.
3. **Connectivity Impact:** Better access to remote regions which strengthened last-mile transport.
4. **Strategic Impact:** Enhances national integration and supports balanced regional development.

### Q8. What challenges still remain?

1. Ensuring long-term route viability



2. Sustaining passenger demand
3. Managing fiscal burden of subsidies
4. Improving airport infrastructure quality
5. Ensuring airline participation

## Conclusion

The revamped UDAN scheme marks a shift from **infrastructure creation to operational sustainability** in regional aviation. While increased funding and extended subsidies address earlier shortcomings, long-term success will depend on **demand generation, financial viability, and efficient implementation.**

## 2. PM-KUSUM 2.0: Solarisation with Battery Storage

### Context

The government is planning to revamp the PM-KUSUM scheme into **PM-KUSUM 2.0**, with a proposal to include battery storage to improve energy management and address solar power limitations.

### Q1. What is the PM-KUSUM Scheme and why was it launched?

1. The **Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM)** was launched in 2019.
2. It aims to promote **solar energy use in agriculture** and reduce dependence on diesel and conventional electricity.
3. The scheme seeks to ensure **energy security for farmers** while supporting India's renewable energy goals.
4. It focuses on **clean energy adoption in rural areas** and improving farmers' income.

### Q2. What are the objectives and features of the PM-KUSUM Scheme?

1. The scheme promotes **solarisation of agricultural pumps**, reducing diesel usage.
2. It ensures **reliable and affordable electricity** supply for irrigation.
3. It reduces the **subsidy burden on DISCOMs**, improving financial health.
4. It enables farmers to **earn additional income** by selling surplus solar power to the grid.

5. The scheme is implemented by the **Ministry of New and Renewable Energy (MNRE).**

### Q3. What is the funding pattern of the scheme?

1. **The Central Government** provides a **30% subsidy.**
2. **State Governments** provide a **30% subsidy.**
3. **Farmers contribute 40%**, with access to bank loans for financing.
4. This ensures **affordability and wider participation.**

### Q4. What are the components of the PM-KUSUM Scheme?

1. **Component A:** Establishment of **decentralised grid-connected solar plants (up to 2 MW)** by farmers, cooperatives, or panchayats to sell electricity.
2. **Component B:** Installation of **standalone solar-powered pumps** in off-grid areas, reducing diesel dependence.
3. **Component C:** Solarisation of **existing grid-connected pumps**, including:
  - a. **Individual Pump Solarisation (IPS)**
  - b. **Feeder-Level Solarisation (FLS)** for large-scale efficiency

### Q5. What has been the progress and achievements of the scheme?

1. Target of **34.8 GW solar capacity addition.**
2. Around **12,164 MW installed capacity** achieved by February 2026.
3. Under Component B, over **10 lakh standalone solar pumps** are installed.
4. More than **13 lakh pumps** are covered under **feeder-level solarisation.**
5. Increased adoption of **clean energy in rural India.**
6. However, progress has been **slower than expected** due to financial and operational issues.

### Q6. What are the challenges in implementation of PM-KUSUM?

1. Delays in **loan disbursement and financial closure** of projects.
2. **High upfront costs** for farmers despite subsidies.
3. Coordination problem between **central and state agencies.**

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4. **Grid integration challenges** because of variability in solar power generation.

### Q7. Why is battery storage being proposed under PM-KUSUM 2.0?

- There is a **timing mismatch** between solar generation and demand:
  - Solar power peaks during **midday**.
  - Agricultural demand begins in the **morning and extends into evening**.
- This mismatch causes **inefficiency and grid instability**.
- Battery storage can:
  - Store excess solar energy** during peak production
  - Supply power later** when demand continues
- It helps in **better energy management and reliable supply**.

### Q8. What are the key developments under PM-KUSUM 2.0?

- Proposal to include **battery energy storage systems** in the scheme.
- Ongoing discussions on storage capacity:
  - Ministry of Power** suggests up to **4 hours**
  - MNRE** proposes around **2 hours**
- Extension of timelines for **financial closure and**

**project completion** to address delays.

- The current scheme will be **merged into PM-KUSUM 2.0**.
- States have been advised to **coordinate with banks** to expedite pending projects.

### Q9. What is the significance of adding battery storage to the scheme?

- Improves **efficiency of solar energy utilisation**.
- Enhances **grid stability and reliability**.
- Ensures **continuous power supply** for farmers beyond daylight hours.
- Supports **renewable energy integration** at a larger scale.
- Helps in achieving India's **clean energy and climate targets**.

### Conclusion

The transition to **PM-KUSUM 2.0** with **battery storage** marks a shift from simple solar adoption to **smart energy management**, making renewable energy more reliable and farmer-friendly.





# ENSURE IAS

## Prelims 2026

### Important Current Affairs

## Free All India Mock Test

By Sachin Jain Sir (IRS - 2016)  
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# ETHICS

## 1. The Cost of Healthcare

### Context

Rising **foreign equity investments** in Kerala's private healthcare sector have triggered concerns about **commercialisation and affordability**.

1. Increasing **out-of-pocket expenditure** and closure of **small affordable hospitals** highlight equity and access issues.
2. Debate over **corporatisation vs public health model** has raised serious **ethical questions on healthcare justice**.

### Ethical Issues Involved

#### 1. Equity vs Profit Motive

- a. Healthcare becoming a **market commodity rather than a public good**
- b. Risk of **exclusion of poor and vulnerable sections**
- c. Growing **urban-rural healthcare divide** due to closure of small hospitals
- d. Ethical conflict between **shareholder value vs patient welfare**
- e. Violates **Rawls' Theory of Justice** (benefit to least advantaged ignored)

#### 2. Commercialisation and Over-medicalisation

- a. Unnecessary diagnostic tests and procedures driven by **revenue targets**
- b. Shift from **need-based care to profit-driven care**
- c. Patients treated as **consumers rather than individuals in distress**
- d. Reflects **Utilitarian distortion**—maximising profit, not welfare

#### 3. Erosion of Doctor–Patient Trust

- a. Doctors under **corporate pressure to meet financial targets**
- b. Decline in **professional autonomy and ethical judgement**
- c. Patients perceive treatment as **exploitative or excessive**

- d. Rising incidents of **violence against healthcare workers**
- e. Undermines **virtue ethics (integrity, compassion, trustworthiness)**

#### 4. Inequality in Healthcare Access

- a. Growth of **high-end “five-star hospitals” vs weak primary care**
- b. Marginalisation of **family doctors and community-based care**
- c. Increased dependence on **insurance and ability to pay**
- d. Ethical issue of **distributive justice in public services**
- e. Violates **Amartya Sen's Capability Approach** (access to health as a basic capability)

#### 5. Governance and Regulatory Ethics

- a. Weak regulation of **pricing, quality, and transparency**
- b. Conflict of interest when investors also have **insurance linkages**
- c. Policy failure in **balancing public-private roles**
- d. Ethical dilemma: **State responsibility vs market efficiency**

### Course of Action

#### 1. Strengthening Public Healthcare System

- a. Increase **investment in government hospitals and primary care**
- b. Revive **family doctor model and community health services**
- c. Ensure **free/subsidised essential healthcare services**
- d. Expand schemes like **Ayushman Bharat / state insurance**
- e. Example: **Tamil Nadu's public health model for affordability**

#### 2. Ethical Regulation of Private Sector

- a. Enforce **price caps and standard treatment protocols**
- b. Mandatory **transparency in billing and diagnostics**
- c. Independent **health regulatory authorities**



- d. Audit unnecessary procedures and overcharging
- 3. **Reorienting Medical Ethics and Professional Values**
  - a. Strengthen ethics training in medical education
  - b. Protect doctor autonomy from corporate pressure
  - c. Promote patient-centred care models
  - d. Institutional ethics committees for decision oversight
- 4. **Inclusive Healthcare Financing Model**
  - a. Develop hybrid financing: public + insurance + regulated private sector
  - b. Reduce out-of-pocket expenditure burden
  - c. Expand risk pooling and universal coverage
  - d. Ensure equity-based insurance access for poor
- e. Inspired by Nordic welfare healthcare models
- 5. **Promoting Preventive and Community Healthcare**
  - a. Focus on lifestyle diseases prevention (diabetes, hypertension)
  - b. Strengthen public awareness and health education
  - c. Invest in primary healthcare infrastructure in rural areas
  - d. Reduce dependence on expensive tertiary care

**Conclusion**

Healthcare must remain a moral commitment, not merely an economic activity. A balanced approach combining ethical governance, strong public systems, and regulated private participation is essential to ensure equity, affordability, and trust in healthcare delivery.



# ENSURE IAS

## Anuj Agnihotri

# AIR-01

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**Student's Feedback After The Session**

*It was an insightful & interactive session and the board was very cordial*



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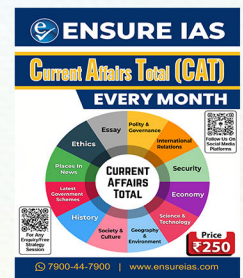
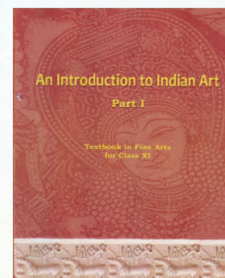
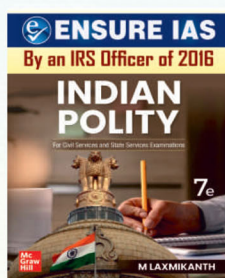
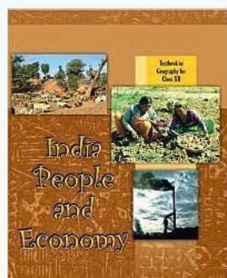
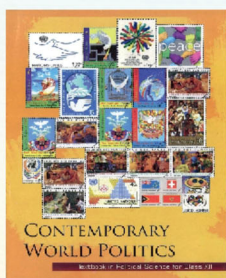
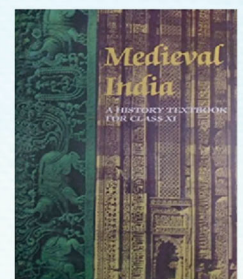
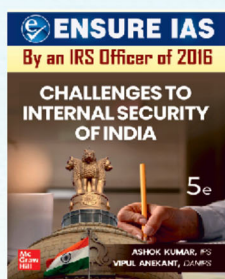
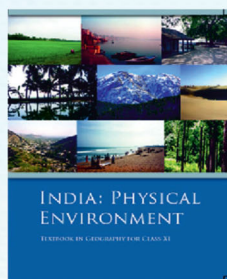
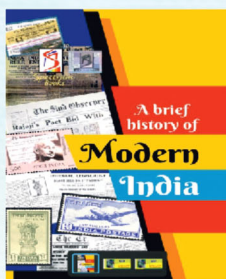
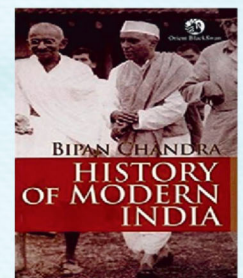
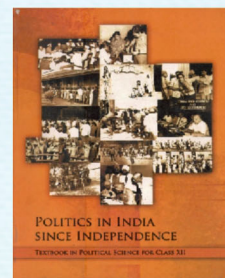
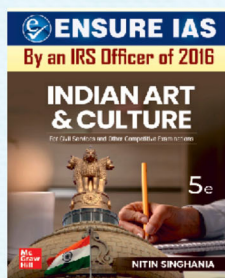
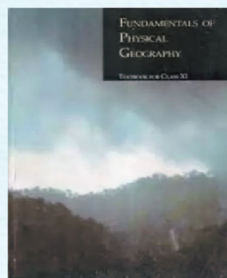
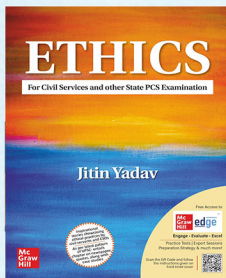
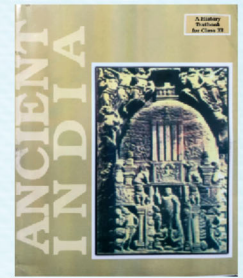
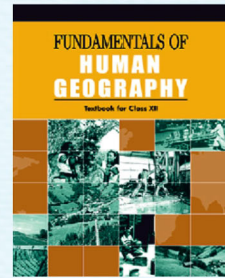
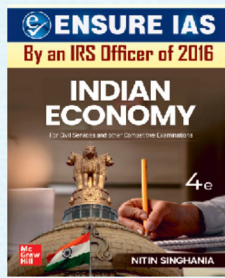
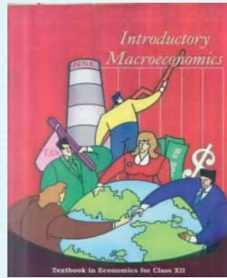
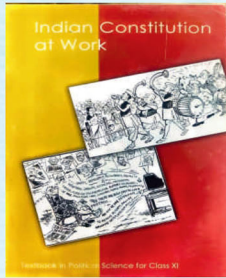
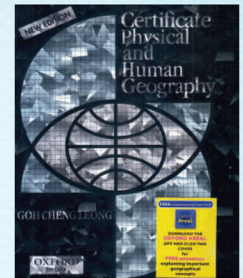
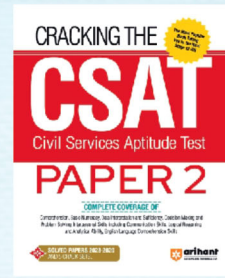
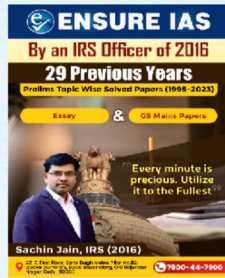
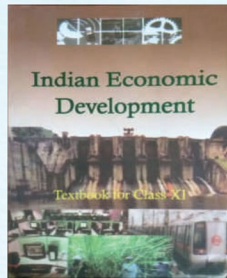
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